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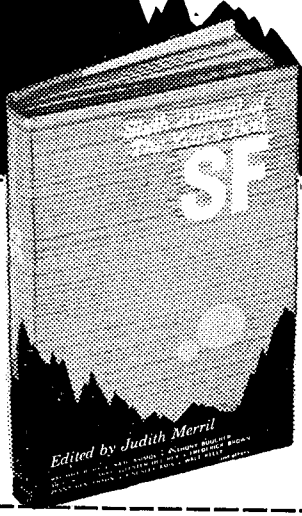

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The Lesson of Thalidomide

■ The thalidomide disaster is, of course, by no means finished; it will continue to be a disaster at least as long as any of the affected babies are living. And the lesson the human race can learn from that thalidomide disaster should go on . . . well, really, forever.

Unfortunately, I have not seen the proper lesson of the thalidomide results published anywhere; what I have seen published has, in every case, been exactly the wrong lesson.

Many thousands of years ago now, Man first learned—first of all animals—the correct lesson from being burned by fire. The lesson had to do with how you *could* handle fire; the other animals only learned to fear fire.

The importance of that difference is that they are still animals—and this is Man's world.

The basic lesson to learn from the thalidomide problem is, simply, that human beings were, are, and always will be expended in the process of learning more about the Universe we live in—and that we'd be wiser to acknowledge that, and accept it. When you do true exploration into the Unknown—some explorers are going to die. John Glenn stated very flatly that men were going to be killed in the effort to penetrate space—that he was lucky, but that deaths were inevitable.

The human race just expended several thousand babies in a battle against disease and misery; this has happened before, and we would be most wise to recognize quite clearly—as clearly as Glenn recognized his danger—that it will most certainly happen again.

And there isn't one thing we can do about it.

Human life is *not* sacred; it is expendable for cause. The Universe doesn't hold it sacred, quite obviously; if we do, we're unrealistic—which means essentially, "neurotic."

Let's take a solid, rational look at the story of thalidomide.

In the first place, Dr. Frances Kelsey acted in a whimsical, arbitrary,

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illogical, and unscientific manner in failing to license thalidomide for distribution in this country. Her course of action—actually, her course of inaction—was absolutely unjustifiable.

The fact that it was completely correct and right has nothing whatever to do with the question of whether or not it was logical, scientific, or justifiable. It may have been a case of pure "woman's intuition" working with illogical, but magnificent accuracy. It may have been a case of precognition—of seeing the future accurately. If either were the case, it would have been totally unscientific, illogical, indefensible . . . and right.

It might have been simply someone with a constitutional inability to make a decision who kept thalidomide off the market in the United States—one of the type who simply can't bring themselves to make a definite decision.

Such a person would have been just as helpful, in this case, as Dr. Kelsey.

Fundamentally, Dr. Kelsey had absolutely no scientific reason—no defensible justification—for not granting thalidomide a license. Her actions with respect to the ethical pharmaceutical company seeking to produce it were arbitrary, whimsical, and unjust.

All of those statements remain one hundred per cent true despite the fact that she saved hundreds, or thousands, of personal tragedies by her inaction. The only circumstance under which it could be held that her actions were logical and just are that you hold that Dr. Kelsey had clear, reliable, dependable extrasensory perception by which she perceived clearly and reliably the future facts that, at the time, were not available.

And that is, basically, why we must acknowledge and accept that the thalidomide type disaster will recur so long as human beings seek to explore for a better way of doing things.

Study the history of thalidomide briefly: (*Continued on page 174*)

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"The Hard Way"

**There are many ways of learning—
but the way you learn a lesson most thoroughly
and permanently is "the hard way."
There is nothing like a club
for getting understanding between the ears.**

by Gordon Dickson

Illustrated by Schoenherr

Kator Secondcousin, cruising in the neighborhood of a Cepheid variable down on his charts as 47391L, but otherwise known to the race he was shortly to discover as *A Ursae Min.*—or Polaris, the pole star—suddenly found himself smiled upon by a Random Factor. Immediately—for although he was merely a Secondcousin, it was of the family of Brutogas—he grasped the opportunity thus offered and locked the controls while he set about planning his Kingdom. Meanwhile, he took no chances. He fastened a tractor beam on the artifact embodying the Random Factor. It was a beautiful artifact, even in its fragmentary condition, fully five times as large as the two-man scout in which he and Aton Maternal-uncle—of the family Ochadi—had been making a routine sampling sweep of debris in the galactic drift. Kator locked it exactly in the center of his viewing screen and leaned back in his pilot's chair. A polished bulkhead to the left of the screen threw back his own image, and he twisted the catlike whiskers of his round face thoughtfully and with satisfaction, as he reviewed the situation with all sensible speed.

The situation could hardly have been more ideal. Aton Maternal-uncle was not even a connection by marriage with the family Brutogas. True, he, like the Brutogasi, was of

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the Hook persuasion politically, rather than Rod. But on the other hand the odds against the appearance of such a Random Factor as this to two men on scientific survey were astronomical. It canceled out Ordinary Duties and Conventions almost automatically. Aton Maternaluncle—had he been merely a disinterested observer rather than the other half of the scout crew—would certainly consider Kator a fool not to take advantage of the situation by integrating the Random Factor positively with Kator's own life pattern. *Besides*, thought Kator, watching his own reflection in the bulkhead and stroking his whiskers, *I am young and life is before me.*

He got up from the chair, loosened a tube on the internal ship's recorder, and extended the three-inch claws on his stubby fingers. He went back to the sleeping quarters behind the pilot room. Back home the door to it would never have been unlocked—but out here in deep space, who would take precautions against such a farfetched situation as this the Random Factor had introduced?

Skillfully, Kator drove his claws into the spinal cord at the base of Aton's round skull, killing the sleeping man instantly. He then disposed of the body out the air lock, replaced the tube in working position in the recorder, and wrote up the fact that Aton had attacked him in a fit of sudden insanity, damaging the recorder as he did so. Finding Kator ready to defend himself, the insane Aton had then leaped into the air lock, and committed suicide by discharging himself into space.

After all, reflected Kator, as he finished writing up the account in the logbook, *While Others Still Think, We Act* had always been the motto of the Brutogasi. He stroked his whiskers in satisfaction.

A period of time roughly corresponding to a half hour later—in the time system of that undiscovered race to whom the artifact had originally belonged—Kator had got a close-line magnetically hooked to the blasted hull of the artifact and was hand-over-hand hauling his spacesuited body along the line toward it. He reached it with little difficulty and set about exploring his find by the headlight of his suit.

It had evidently been a ship operated by people very much like Kator's own human kind. The doors were the right size, the sitting devices were sittable-in. Unfortunately it had evidently been destroyed by a pressure-warp explosion in a drive system very much like that aboard the scout. Everything not bolted down in it had been expelled into space. No, not everything. A sort of hand carrying-case was wedged between the legs of one of the sitting devices. Kator unwedged it and took it back to the scout with him.

After making the routine safety tests on it, Kator got it open. And a

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magnificent find it turned out to be. Several items of what appeared to be something like cloth, and could well be garments, and what were clearly ornaments or perhaps badges of rank, and a sort of coloring-stick of soft red wax. But these were nothing to the real find.

Enclosed in a clear wrapping material formed in bag-shape, were a pair of what could only be foot-protectors with soil still adhering to them. And among the loose soil in the bottom of the bag, was the tiny dried form of an organic creature.

A dirt-worm, practically indistinguishable from the dirt-worms at home.

Kator lifted it tenderly from the dirt with a pair of specimen tweezers and sealed it into a small cube of clear plastic. This, he thought, slipping it into his belt pouch, was his. There was plenty in the wreckage of the ship and in the carrying-case for the examiners to work on back home in discovering the location of the race that had built them all. This corpse—the first of his future subjects—was his. A harbinger of the future, if he played his knuckle-dice right. An earnest of what the Random Factor had brought.

Kator logged his position and the direction of drift the artifact had been taking when he had first sighted it. He headed himself and the artifact toward Homeworld, and turned in for a well earned rest.

As he drifted off to sleep, he began remembering some of the sweeps he and Aton had made together before this, and tears ran down inside his nose. They had never been related, it was true, even by the marriage of distant connection. But Kator had grown to have a deep friendship for the older Ruml, and Kator was not the sort that made friends easily.

Only, when a Kingdom beckons, what can a man do?

Back on the Ruml Homeworld—capital planet of the seven star-systems where the Ruml were in power—an organization consisting of some of the best minds of the race fell upon the artifact that Kator had brought back, like robber wasps upon the honey-horde of a wild bees hive, where the hollow tree trunk hiding it has been split open by lightning. Unlike the lesser races and perhaps the unknown ones who had created the artifact, there was no large popular excitement over the find, no particular adulation of its discoverer. The artifact could well fail to pan out for a multitude of reasons. Perhaps it was not even of this portion of the galaxy. Perhaps it had been wandering the lightless immensity of space for a million years or more; and the race that had created it was either dead or gone to some strange elsewhere. As for the man who had found it—he was no more than a second cousin of an accept-

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able, but not great house. And only a few seasons adult, at that.

Only one individual never doubted the promise of reward embodied in the artifact. And that was Kator.

He accepted the reward in wealth that he was given on his return. He took his name off the scout list, and mortgaged every source of income available to him—even down to his emergency right of demand on the family coffers of the Brutogasi. And that was a pledge he would eventually be forced to redeem, or be cut off from the protection of family relationship—which was equivalent to being deprived of the protection of the law among some other races.

He spent his mornings, all morning, in a *salle d'armes*, and his afternoons and evenings either buttonholing or entertaining members of influential families. It was impossible that such activity could remain uninterpreted. The day the examination of the artifact was completed, Kator was summoned to an interview with The Brutogas—head of the family, that individual to whom Kator was second cousin.

Kator put on his best kilt and weapons-harness and made his way at the appointed hour down lofty echoing corridors of white marble to that sunlit office which he had entered, being only a second cousin, only on one previous occasion in his life—his naming day. Behind the desk in the office on a low pedestal squatted The Brutogas, a shrewd, heavy-bodied, middle-aged Ruml. Kator bowed, stopping before the desk.

"We understand," said The Brutogas, "you have ambitions to lead the expedition shortly to be sent to the Homeworld of the Muffled People."

"Sir?" said Kator, blandly.

"Quite right," said The Brutogas, "don't admit anything. I suppose though you'd like to know what's been extracted in the way of information about them from that artifact you brought home "

"Yes, sir," said Kator, standing straight, "I would."

"Well," said the head of the family, flicking open the lock on a report that lay on the desk before him, "the deduction is that they're about our size, biped, of a comparable level of civilization but probably overloaded with taboos from an earlier and more primitive stage. Classified as violent, intractable, and probably extremely dangerous. You still want to lead that expedition?"

"Sir," said Kator, "if called upon to serve—"

"All right," said The Brutogas, "I respect your desire not to admit your goal. Not that you can seriously believe after all your politicking through the last two seasons that anybody can be left in doubt about what you're after." He breathed out through his nose thoughtfully, stroked his graying cat-whiskers that were nearly twice

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the length of Kator's, and added, "Of course it would do our family reputation no harm to have a member of our house in charge of such an expedition."

"Thank you, sir."

"Don't mention it. However, the political climate at the moment is not such that I would ordinarily commit the family to attempting to capture the Keysman post in this expedition—or even the post of Captain. Something perhaps you don't know, for all your conversations lately, is that the selection board will be a seven-man board and it is a practical certainty that the Rods will have four men on it to three of our Hooks."

Kator felt an unhappy sinking sensation in the region of his liver, but he kept his whiskers stiff.

"That makes the selection of someone like me seem pretty difficult, doesn't it, sir?"

"I'd say so, wouldn't you?"

"Yes, sir."

"But you're determined to go ahead with it anyhow?"

"I see no reason to change my present views about the situation sir."

"I guessed as much." The Brutogas leaned back in his chair. "Every generation or so, one like you crops up in a family. Ninety-nine per cent of them end up family-less men. And only one in a million is remembered in history."

"Yes, sir."

"Well, you might bear in mind then that the family has no concern in this ambition of yours and no intention of officially backing your candidacy for Keysman of the expedition. If by some miracle you should succeed, however, I expect you will give due credit to the wise counsel and guidance of your family elders on an unofficial basis."

"Yes, sir."

"On the other hand, if your attempt should somehow end up with you in a scandalous or unfavorable position, you'd better expect that that mortgage you sold one of the—Chelesi, wasn't it?—on your family rights will probably be immediately called in for payment."

The sinking sensation returned in the region of Kator's liver.

"Yes, sir."

"Well, that's all. Carry on, Secondcousin. The family blesses you."

"I bless the family," said Kator, automatically, and went out feeling as if his whiskers had been singed.

Five days later, the board to choose officers for the Expedition to the Homeworld of the Muffled People, was convened. The board sent out twelve invitations for Keysman, and the eleventh invitation was sent to Kator.

It could have been worse. He could have been the twelfth invited.

When he was finally summoned in to face the six-man board—from the room in which he had watched the ten previous candidates go for

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their interviews—he found the men on it exactly as long-whiskered and cold-eyed as he had feared. Only one member looked at him with anything resembling approval—and this was because that member happened to be a Brutogas, himself, Ardof Halfbrother. The other five judges were, in order from Ardof at the extreme right behind the table Kator faced, a Cheles, a Worna, (both Hooks, politically, and therefore possible votes at least for Kator) and then four Rods—a Gulbano, a Ferth, a Achobka, and The Nelkosan, head of the Nelkosani. The last could hardly be worst. Not only did he outrank everyone else on the board, not only was he a Rod, but it was to the family he headed that Aton Maternaluncle, Kator's dead scoutpartner had belonged. A board of inquiry had cleared Kator in the matter of Aton's death. But the Nelkosani could hardly have accepted that with good grace, even if they had wanted to, without losing face.

Kator took a deep breath as he halted before the table and saluted briefly with his claws over the central body region of his heart. Now it was make or break.

"The candidate," said the Nelkosan, without preamble, "may just as well start out by trying to tell us whatever reasons he may have to justify awarding such a post as Keysman to one so young."

"Honorable Board Members," said Kator, clearly and distinctly, "my record is before you. May I point out, however, that training as a scout, involving work as it does both on a scientific and ship-handling level, as well as associating with one's scoutpartner . . ."

He talked on. He had, like all the candidates, carefully prepared and rehearsed the speech beforehand. The board listened with the mild boredom of a body which has heard such speeches ten times over already —with the single exception of The Nelkosan, who sat twisting his whiskers maliciously.

When Kator finally concluded the board members turned and looked at each other.

"Well?" said The Nelkosan. "Shall we vote on the candidate?"

Heads nodded down the line. Hands reached for ballots chips—black for acceptance, white for rejection—the four Rods automatically picking up black, the three Hooks reaching for white. Kator licked his whiskers furtively with a dry tongue and opened his mouth before the chips were gathered—

"I appeal!" he said.

Hands checked in midair. The board suddenly woke up as one man. Seven pairs of gray eyes centered suddenly upon Kator. Any candidate might appeal—but to do so was to call the board wrong upon one of its actions, and that meant somebody's honor was due to be called in question. For a candidate without family backing to question the honor of elders such as sat on a board of selection was to put his whole future in jeopardy.

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The board sat back on its collective haunches and considered Kator.

"On what basis, if the candidate pleases?" inquired The Nelkosan, in far too pleasant a tone of voice.

"Sir, on the basis that I have another reason to urge for my selection than that of past experience," said Kator.

"Interesting," purred The Nelkosan, glancing down the table at the other board members. "Don't you think so, sirs?"

"Sir, I do find it interesting," said Ardof Halfbrother, the Brutogas, in such an even tone that it was impossible to tell whether he was echoing The Nelkosan's hidden sneer, or taking issue with it.

"In that case, candidate," The Nelkosan turned back to Kator, "by all means go ahead. What other reason do you have to urge? I must say"—he glanced down the table again—"I hope it justifies your appeal."

"Sir, I think it will." Kator thrust a hand into his belt pouch, withdrew something small, and stepping forward, put it down on the table before them all. He took his hand away, revealing a cube of clear plastic in which a small figure floated.

"A dirt worm?" said The Nelkosan, raising his whiskers.

"No, sir," said Kator. "The body of a being from the planet of the Muffled People."

"*What?*" Suddenly the room was in an uproar and there was not a board member there who was not upon his feet. For a moment pandemonium reigned and then all the voices died away at once as all eyes turned back to Kator, who was standing once more at attention before them.

"Where did you get this?"

It was The Nelkosan speaking and his voice was like ice.

"Sirs" said Kator, without twitching a whisker, "from the artifact I brought back to Homeworld two seasons ago."

"And you never turned it in to the proper authorities or reported the fact you possessed it?"

"No, sir."

There was a moment's dead silence in the room.

"*You know what this means?*" The words came spaced and distinct from The Nelkosan.

"I realize," said Kator, "what it would mean ordinarily—"

"Ordinarily!"

"Yes, sir. Ordinarily. My case, however," said Kator, as self-possessedly as he could, "is not ordinary. I did not take this organism from the artifact for the mere desire of possessing it."

The Nelkosan sat back and touched his whiskers gently, almost thoughtfully. His eyelids drooped until his eyes were almost hidden.

"You did not?" he murmured softly.

"No, sir," said Kator.

"Why did you take it, if we may ask?"

"Sir," said Kator, "I took it

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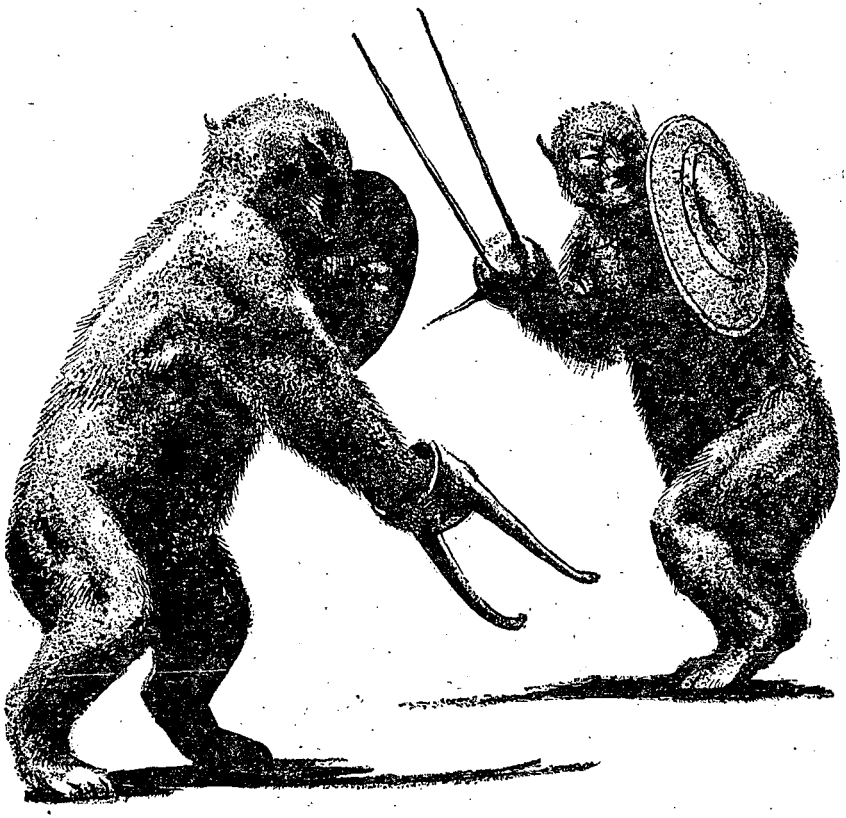

after a great deal of thought for the specific purpose of exhibiting it to this board of selection for Keysman of the Expedition to the planet of the Muffled People."

His words went out and seemed to fall dead in the face of the silence of the watching members of the board. A lengthening pause seemed to ring in his ears as he waited.

"For," said the voice of The Nelkosan, breaking the silence at last, "what reason did you choose to first steal this dead organism, and then plan to show it to us?"

"Sir," said Kator, "I will tell you."

"Please do," murmured The Nelkosan, almost closing his eyes.

Kator took a deep breath.

"Elders of this board," he said, "you, whose responsibility it is to select the Keysman—the man of final authority, on ship and off—of this expedition, know better

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than anyone else how important an expedition like this is to all our race. In ourselves, we feel confident of our own ability to handle any situation we may encounter in space. But confidence alone isn't enough. The Keysman in charge of this expedition must not merely be confident of his ability to scout these aliens we have named The Muffled People because of their habit of wrapping themselves in cloths. The Keysman you pick must in addition be able to perform his task, not merely well or excellently —but *perfectly*, as laid down in the precepts of The Morahnpa, he who originally founded a kingdom for our race on the third planet of Star 12A, among the lesser races there."

"Our candidate," interrupted The Nelkosan from beneath his half-closed eyes, "dreams of founding himself a kingdom?"

"Sir!" said Kator, standing stiffly. "I think only of our race."

"You had better convince us of that, candidate?"

"I shall, sir. With my culminating argument and explanation of why I took the dead alien organism. I took it, sirs, to show to you. To convince you beyond doubt of one thing. Confidence is not enough in a Keysman. Skill is not enough. *Perfection*—fulfillment of his task without a flaw, as defined by The Morahnpa—is what is required here. And for perfection a commitment is required beyond the ordinary duty of a Keysman to his task."

Kator paused. He could tell from none of them whether he had caught their interest or not.

"I offer you evidence of my own commitment in the shape of this organism. So highly do I regard the need for success on this expedition, that I have gambled with my family, my freedom and my life to convince you that I will go to any length to carry it through to the point of perfection. Only someone willing to commit himself to the extent I have demonstrated by taking this organism should be your choice for Keysman on this Expedition!"

He stopped talking. Silence hung in the room. Slowly, The Nelkosan uncurled himself and reaching down the table, gathered in the cube with the worm inside and brought it back to his own place and held it.

"You've made your gesture, candidate," he said, with slitted eyes. "But who can tell whether you meant anything more than a gesture, now that you've given the organism back to us?" He lifted the cube slightly and turned it so that the light caught it. "Tell us, what does it mean to you now, candidate?"

The matter, Kator thought with a cold liverish sense of fatalism, was doomed to go all the way. There was no other alternative now. He looked at The Nelkosan.

"I'll kill you to keep it!" he said.

After that, the well-oiled machinery of custom took over. The

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head of a family, or a member of a selection board, or anyone in authority of course did not have to answer challenges personally. That would be unfair. He could instead name a deputy to answer the challenge for him. The heads of families in particular usually had some rather highly trained fighters to depute for challenges. That this could also bring about an unfair situation was something that occurred only to someone in Kator's position.

The selection board adjourned to the nearest *salle d'armes*. The deputy for The Nelkosan—Horaag Adoptedson—turned out to be a man ten seasons older than Kator, half again as large and possessing both scars and an air of confidence.

"I charge you with insult and threat," he said formally to Kator as soon as they were met in the center of the floor."

"You must either withdraw that or fight me with the weapons of my choice," said Kator with equal formality.

"I will fight. What weapons?"

Kator licked his whiskers.

"Double-sword," he said. Horaag Adoptedson started to nod—

"And shields," added Kator.

Horaag Adoptedson stopped nodding and blinked. The board stared at each other and the match umpire was questioned. The match umpire, a man named Bolf Paternalnephew, checked the books.

"Shields," he announced, "are archaic and generally out of use, but still permissible."

"In that case," said Kator, "I have my own weapons and I'd like to send for them."

The weapons were sent for. While he waited for them, Kator saw his opponent experimenting with the round, target-shaped shield of blank steel that had been found for him. The shield was designed to be held in the left hand while the right hand held the sword. Horaag Adoptedson was trying fencing lunges with his long, twin-bladed sword and trying to decide what to do with the shield which he was required to carry. At arm's length behind him the shield threw him off balance. Held before him, it restricted his movements.

Kator's weapons came. The shield was like the one found for his opponent, but the sword was as archaic as the shield. It was practically hiltless, and its parallel twin blades were several times as wide as the blades of Horaag's sword, and half the length. Kator slid his arm through a wide strap inside the shield and grasped the handle beyond it. He grasped his archaically short sword almost with an underhand grip and took up a stance like a boxer.

The board murmured. Voices commented to the similarity between Kator's fighting position and that of figures on old carvings depicting ancestral warriors who had used such weapons. Horaag quickly fell into a duplicate of Kator's position—but with some clumsiness evident.

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"Go!" said the match umpire. Kator and Horaag moved together and Kator got his shield up just in time to deflect a thrust from Horaag's long sword. Kator ducked down behund his shield and moved in, using his short sword with an underhand stabbing motion. Horaag gave ground. For a few moments swords clanged busily together and on the shields.

Horaag circled suddenly. Kator, turning, tripped and almost went down. Horaag was instantly on top of him. Kator thrust the larger man off with his shield. Horaag, catching on, struck high with his shield, using it as a weapon. Kator slipped underneath, took the full force of the shield blow from the stronger man and was driven to one knee. Horaag struck down with his sword. Kator struck upward from his kneeling position and missed. Horaag shortened his sword for a death-thrust downward and Kator, moving his shorter double blade in a more restricted circle came up inside the shield and sword-guard of the bigger man and thrust Horaag through the shoulder. Horaag threw his arms around his smaller opponent to break his back and Kator, letting go of his sword handle in these close quarters, reached up and clawed the throat out of his opponent.

They fell together.

When a bloody and breathless Kator was pulled from under the body of Horaag and supported to the table which had been set up for the board, he saw the keys to every room and instrument of the ship which would carry the Expedition to the planet of the Muffled People, lying in full sight, waiting for him.

The ship of the Expedition carried fifty-eight men, including Captain and Keysman. Shortly after they lifted from the Ruml Homeworld, just as soon as they were the distance of one shift away from their planetary system, Kator addressed all crew members over the intercommunications system of the ship.

"Expedition members," he said, "you all know that as Keysman, I have taken my pledge to carry this Expedition through to a successful conclusion, and to remain impartial in my concern for its Members, under all conditions. Let me now reinforce that pledge by taking it again before you all. I promise you the order of impartiality which might be expected by strange but equal members of an unknown family; and I commit myself to returning to Homeworld with the order of scouting report on this alien race of Muffled People, that only a perfect operation can provide. I direct all your attentions to that word, *perfect*, and a precept laid down by an ancestor of ours, The Morahnpa—*if all things are accomplished to perfection, how can failure attend that operation in which they are accomplished?* I have dedicated myself to the success of this Expedition

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in discovering how the Muffled People may be understood and conquered. Therefore I have dedicated myself to perfection. I will expect a like dedication from each one of you."

He turned away from the communications board and saw the ship's Captain, standing with arms folded and feet spread a little apart. The Captain's eyes were on him.

"Was that really necessary, Keysman?" said the Captain. He was a middle-aged man, his chest-strap heavy with badges of service. Kator thought that probably now was as good a time as any to establish their relationship.

"Have you any other questions, Captain" he asked.

"No, sir."

"Then continue with your normal duties."

"Yes, sir."

The Captain inclined his head and turned back to his control board on the other side of the room. His whiskers were noncommittal.

Kator left the control room and went down the narrow corridor to his own quarters. Locking the door behind him—in that allowance of luxury that only the Keysman was permitted—he went across to the small table to which was pinned the ring holding his Keys, his family badge, and the authorization papers of the expedition.

He rearrange these to make room in the center. Then he took from his belt pouch and put in the place so provided, the clear plastic cube containing the alien worm. It glittered in that position under the overhead lights of the room; and the other objects surrounded it, thought Kator, like obsequious servants.

There was only one quarrel on the way requiring the adjudication of the Keysman, and Kator found reason to execute both men involved. The hint was well taken by the rest of the Expedition and there were no more disputes. They backtracked along the direction calculated on their Homeworld to have been the path of the artifact, and found themselves after a couple of nine-day weeks midway between a double star with a faint neighbor, Star Unit 439LC&W—and a single yellow star which was almost the twin of the brighter partner of the double star, Star 44OL.

The Ruml investigations of the artifact had indicated the Muffled People's Homeworld to be under a single star. The ship was therefore turned to the yellow sun.

Traces of artifically produced radio emissions were detected well out from the system of the yellow sun. The ship approached cautiously—but although the Ruml discovered scientific data-collecting devices in orbit as far out as the outer fringes of the planetary system surrounding the yellow sun, they found no warning stations or sentry ships.

Penetrating cautiously further into the system, they discovered stations on the moons of two larger,

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outer planets, some native ship activity in an asteroid belt, and light settlements of native population on the second and fourth planets. The third planet, on the other hand, was swarming with aliens.

The ship approached under cover of that planet's moon, ducked around to the face turned toward the planet, at nightfall, and quickly sealed itself in, a ship's length under the rock of the moon's airless surface. Tunnels were driven in the rock and extra workrooms hollowed out.

Up until this time the ship's captain had been in some measure in command of the Expedition. But now that they were down all authority reverted to the Keysman. Kator spent a ship's-day studying the plan of investigation recommended by the Ruml Homeworld authorities, and made what changes he considered necessary in them. Then he came out of his quarters and set the whole force of the expedition to building and sending out collectors.

These were of two types. The primary type were simply lumps of nickel-iron with a monomolecular surface layer sensitized to collect up to three days worth of images, and provided with a tiny internal drive unit that would explode on order from the ship or any attempt to block or interfere with the free movement of the device. Several thousand of these were sent down on to the planet and recovered with a rate of necessary self-destruction less than one tenth of one per cent. Not one of the devices was even perceived, let alone handled by a native. At the end of five weeks, the Expedition had a complete and detailed map of the world below, its cities and its ocean bottoms. And Kator set up a large chart in the gathering room of the ship, listing Five Phases, numbered in order. Opposite Phase One, he wrote Complete to Perfection.

The next stage was the sending down of the secondary type of collectors—almost identical lumps of nickel iron, but with cargo-carrying space inside them. After nine weeks of this and careful study of the small species of alien life returned to the Expedition Headquarters on the moon, he decided that one small flying blood-sucking insect, one crawling, six-legged psuedo-insect —one of the arthopoda, an arachnid or *spider*, in Muffled People's classification—and a small, sharp-nosed, long-tailed scavenging animal of the Muffled People's cities, should be used as live investigators. He marked Phase Two as Complete to Perfection.

Specimens of the live investigators were collected, controlling mechanisms surgically implanted in them, and they were taken back to the planet's surface. By the use of scanning devices attached to the creatures, Expedition members remote-controlling them from the moon were able to investigate the society of the Muffled People at close hand.

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The live investigators were directed by their controller into the libraries, factories, hospitals. The first two phases of the investigation had been cold matters of collecting, collating and filing data. With this third phase, and the on-shift members of the expedition living vicarious insect and animal lives on the planet below, a spirit of adventure began to permeate the fifty-six men remaining on the moon.

The task before them was almost too great to be imagined. It was necessary that they hunt blindly through the civilization below until chance put them on the trail of the information they were after concerning the character and military strength of the Muffled People. The first six months of this phase produced no evidence at all of military strength on the part of the Muffled People—and in his cabin alone Kator paced the floor, twitching his whiskers. The character of the Muffled People as a race was emerging more clearly every day and it was completely at odds with such a lack of defensive elements. And so was the Muffled People's past history as the Expedition had extracted it from the libraries of the planet below.

He called the Captain in.

"We're overlooking something," he said.

"I'll agree with that, Keysman," said the Captain. "But knowing that doesn't solve our problem. In the limited time we've had with the limited number of men available, we're bound to face blank spots."

"Perfection," Kator said, "admits of no blank spots."

The Captain looked at him with slitted eyes.

"What does the Keysman suggest?" he said. ". . . Sir."

"For one thing," Kator's eyes were also slitted, "a little more of an attitude of respect."

"Yes, sir."

"And for another thing," said Kator, "I make the suggestion that what we're looking for must be underground. Somewhere the Muffled People must have a source of military strength comparable to our own—their civilization and their past history is too close to our own for there not to be such a source. If it had been on the surface of the planet or in one of the oceans, we would've discovered it by now. So it must be underground."

"I'll have the men check for underground areas."

"You'll do better than that, Captain. You'll take every man and put them in a hookup with the long-tailed scavenging animals, and run their collectors underground. In all large blank areas."

"Sir."

The Captain went out. The change in assignment was made and two shifts later—by sheer luck or co-incidence—the change paid off. One of the long-tailed animal collectors was trapped aboard a large truck transporting food. The truck went out from one of the large

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cities in the middle of the western continent of the planet below and at about a hundred and fifty of the Muffled People's miles from the city turned into a country route that led to an out-of-operation industrial manufacturing complex. It trundled past a sleepy farm or two, across a bridge over a creek and down a service road into the complex. There it drove into a factory building and unloaded its food onto a still and silent conveyor belt.

Then it left.

The collector, left with the food, suddenly felt the conveyor belt start to move. It carried the food deep into the factory building, through a maze of machinery, and delivered it onto a platform, which dropped without warning into the darkness of a deep shaft.

And it was at this point that the Ruml in contact with the collector, called Kator. Kator did not hesitate.

"Destroy it!" he ordered.

The Ruml touched a button and the collector stiffened suddenly and collapsed. Almost immediately a pinpoint of brilliance appeared in the center of its body and in a sec-

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ond it was nothing but fine gray ash, which blew back up the shaft on the draft around the edges of the descending platform.

While the rest of the men of the Expedition there present in the gathering room watched, Kator walked over to the chart he had put up on the wall. Opposite Phase Three, with a clear hand he wrote *Complete to Perfection.*

Kator allowed the Expedition a shift in which to celebrate. He did not join the celebration himself or swallow one of the short-lived bacterial cultures that temporarily manufactured ethyl alcohol in the Ruml stomachs from carbohydrates the Expedition Members had eaten. Intoxication was an indulgence he could not at the moment permit himself. He called the Captain into conference in the Keysman's private quarters.

"The next stage," Kator said, "is, of course, to send a man down to examine this underground area."

"Of course, sir," said the Captain. The Captian had swallowed one of the cultures, but because of the necessity of the conference had eaten nothing for the last six hours. He thought of the rest of the Expedition gorging themselves in the gathering room and his own hunger came sharply on him to reinforce the anticipation of intoxication.

"So far," said Kator, "the Expedition has operated without mistakes. Perfection of operation must continue. The man who goes down on to the planet of the Muffled People must be someone whom I can be absolutely sure will carry the work through to success. There's only one individual in this Expedition of whom I'm that sure."

"Sir?" said the Captain, forgetting his hunger suddenly and experiencing an abrupt chilliness in the region of his liver. "You aren't thinking of me, are you, Keysman? My job with the ship, here—"

"I am not thinking of you."

"Oh," said the Captain, breathing freely. "In that case . . . while I would be glad to serve . . .

"I'm thinking of myself."

"*Keysman!*"

It was almost an explosion from the Captain's lips. His whiskers flattened back against his face.

Kator waited. The Captain's whiskers slowly returned to normal position.

"I beg your pardon, sir," he said. "Of course, you can select whom you wish. It's rather unheard of, but . . . Do you wish me to act as Keysman while you're down there "

Kator smiled at him.

"No," he said.

The Captain's whiskers twitched slightly, involuntarily, but his face remained impassive.

"Who, then, sir?"

"No one."

This time the Captain did not even explode with the word of Kator's title. He merely stared, almost blindly at Kator.

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"No one," repeated Kator, slowly. "You understand me, Captain? I'll be taking the keys of the ship with me."

"But—" the Captain's voice broke and stopped. He took a deep breath. "I must protest officially, Keysman," he said. "It would be extremely difficult to get home safely if the keys were lost and the authority of a Keysman was lacking on the trip back."

"It will be impossible," said Kator, evenly. "Because I intend to lock ship before leaving."

The Captain said nothing.

"Perfection, Captain," remarked Kator in the silence, "can imply no less than utter effort and unanimity —otherwise it isn't perfection. Since to fail of perfection is to fail of our objective here, and to fail of our objective is to render the Expedition worthless—I consider I am only doing my duty in making all Members of the Expedition involved in a successful effort down on the planet's surface."

"Yes, sir," said the Captain woodenly.

"You'd better inform the Expedition of this decision of mine."

"Yes, sir."

"Go ahead then," said Kator. The Captain turned toward the door. "And Captain—" The Captain halted with the door half open, and looked back. Kator was standing in the middle of the room, smiling at him. "Tell them I said for them to enjoy themselves—this shift."

"Yes, sir."

The Captain went out, closing the door behind him and cutting off his sight of Kator's smile. Kator turned and walked over to the table holding his Keys, his family badge, his papers and the cube containing the worm. He picked up the cube and for a moment held it almost tenderly.

None of them, he thought, would believe him if he told them that it was not himself he was thinking of, but of something greater. Gently, he replaced the cube among the other precious items on the table. Then he turned and walked across the room to squat at his desk. While the sounds of the celebration in the gathering room came faintly through the locked door of his quarters, he settled down to a long shift of work, planning and figuring the role of every Member of the Expedition in his own single assault upon the secret place of the Muffled People.

The shift after the celebration, Kator set most of the Expedition Members to work constructing mechanical burrowing devices which could dig down to, measure and report on the outside of the underground area he wished to enter. Meanwhile, he himself with the help of the Captain and two specialists in such things, attacked the problem of making Kator himself into a passable resemblance of one of the Muffled People.

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The first and most obvious change was the close-clipping of Kator's catlike whiskers. There was no pain or discomfort involved in this operation, but so deeply involved were the whiskers in the sociological and psychological patterns of the adult male Ruml, that having them trimmed down to the point of invisibility was a profound emotional shock. The fact that they would grow again in a matter of months—if not weeks—did not help. Kator suffered more than an adult male of the Muffled People would have suffered if the normal baritone of his voice had suddenly been altered to a musical soprano.

The fact that the whiskers had been clipped at his own order, somehow made it worse instead of better.

The depilation that removed the rest of the fur on Kator's head, bad as it was, was by contrast a minor operation. After the shock of losing the whiskers, Kator had been tempted briefly to simply dye the close gray fur covering the skull between his ears like a beanie. But to do so would have been too weak a solution to the fur problem. Even dyed, his natural head-covering bore no relationship to human hair.

Still, dewhiskered and bald, Kator's reflection in a mirror presented him with an unlovely sight. Luckily, he did, now, look like one of the Muffled People after a fashion from the neck up. The effect was that of a pink-skinned oriental with puffy eyelids over unnaturally wide and narrow eyes. But it was undeniably native like.

The rest of his disguise would have to be taken care of by the mufflings he would be wearing, after the native fashion. These complicated body-coverings, therefore, turned out to be a blessing in disguise, with pun intended. Without them it would have been almost impossible to conceal Kator's body-differences from the natives.

As it was, foot-coverings with built-up undersurfaces helped to disguise the relative shortness of Kator's legs, as the loose hanging skirt of the sleeved outside upper-garment hid the unnatural—by Muffled People physical standards—narrowness of his hips. Not a great deal could be done about the fact that the Ruml spine was so connected to the Ruml pelvis that Kator appeared to walk with his upper body at an angle leaning forward. But heavy padding widened the narrow Ruml shoulders and wide sleeves hid the fact that the Ruml arms, like the Ruml legs, were normally designed to be kept bent at knee and elbow-joint.

When it was done, Kator was a passable imitation of a Muffled Person—but these changes were only the beginning. It was now necessary for him to learn to move about in these hampering garments with some appearance of native naturalness.

The mufflings were hideously uncomfortable—like the clinging

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but lifeless skin of some loathsome creature. But Kator was as unyielding with himself as he was with the other Expedition Members. Shift after shift, as the rest of the Expedition made their burrowing scanners, sent them down and collected them back on the moon to digest the information they had discovered, Kator tramped up and down his own quarters, muffled and whiskerless—while the Captain and the two specialists compared his actions with tapes of the natives in comparable action, and criticized.

Intelligent life is inconceivably adaptable. There came a shift finally when the three watchers could offer no more criticisms; and Kator himself no longer felt the touch of the mufflings about his body for the unnatural thing it was.

Kator announced himself satisfied with himself; and went to the gathering room for a final briefing on the information the burrowing mechanisms had gathered about the Muffled People's secret place. He stood—a weird-looking Ruml figure in his wrappings while he was informed that the mechanisms had charted the underground area and found it to be immense—half a native mile in depth, twenty miles in extent and ten in breadth. Its ceilings was an eighth of a mile below the surface and the whole underground area was walled in by an extremely thick casing of native concrete stiffened by steel rods.

The mechanisms had been unable to scan through the casing and, since Kator had given strict orders that no attempt was to be made to burrow or break through the casing for fear of alarming the natives, nothing was discovered about the interior.

What lay inside, therefore, was still a mystery. If Kator was to invade the secret place, therefore, he would have to do so blind—not knowing what in the way of defenders or defenses he might discover. The only open way in was down the elevator shaft where the food shipments disappeared.

Kator stood in thought, while the other Members of the Expedition waited around him.

"Very well," he said at last. "I consider it most likely that this place has been set up to protect against invasion by others of the natives, themselves—rather than by someone like myself. At any rate, we will proceed on that assumption."

And he called them together to give them final orders for the actions they would have to take in his absence.

The face of the planet below them was still in night when Kator breached the moon surface just over the site of the Expedition Headquarters and took off planetward in a small, single-man ship. Behind him, the hole in the dust-covered rock filled itself in as if with a smooth magic.

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His small ship lifted from the moon and dropped toward the darkness of the planet below.

He came to the planet's surface, just as the sun was beginning to break over the eastern horizon and the fresh chill of the post-dawn drop of temperature was in the air. He camouflaged his ship, giving it the appearance of some native alder bushes, and stepped from it for the first time onto the alien soil.

The strange, tasteless atmosphere of the planet filled his nostrils. He looked toward the rising sun and saw a line of trees and a ramshackle building blackly outlined against the redness of its half-disk. He turned a quarter-circle and began to walk toward the factory.

Not far from his ship, he hit the dirt road running past the scattered farms to the complex. He continued along it with the sun rising strongly on his left, and after a while he came to the wooden bridge over the creek. On this, as he crossed it, his footcoverings fell with a hollow sound. In the stillness of the dawn these seemed to echo through the whole sleeping world. He hurried to get off the planks back onto dirt road again; and it was with an internal lightening of tension that he stepped finally off the far end of the bridge.

"Up early, aren't you?" said a voice.

Kator checked like a swordsman, just denying in time the impulse that would have whirled him around like a discovered thief. He turned casually. On the grassy bank of the creek just a few feet below this end of the bridge, an adult male native sat.

A container of burning vegetation was in his mouth, and smoke trickled from his lips. He was muffled in blue leg-coverings and his upper body was encased in a worn, sleeved muffling of native eather. He held a long stick in his hands, projecting out over the waters of the creek, and as Kator faced him, his lips twisted upward in the native fashion.

Kator made an effort to copy the gesture. It did not come easily, for a smile did not mean humor among his people as much as triumph, and laughter was almost unknown except in individuals almost at the physical or mental breaking point. But it seemed to satisfy the native.

"Out for a hike?" said the native.

Kator's mind flickered over the meaning of the words. He had drilled himself to the point of unconscious use, in the native language of this area. But this was the first time he had spoken native to a real native. Strangely, what caught at his throat just then was nothing less than embarrassment. Embarrassment at standing whiskerless before this native—who could know nothing of whiskers, and what they meant to a Ruml.

"Thought I'd tramp around a bit," Kator answered, the alien words sounding awkward in his mouth. "You fishing?"

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The native waggled the pole slightly, and a small colored object floating on the water trembled with the vibration sent from the rod down the line attached to it.

"Bass," said the native.

Kator wet his nonexistent whiskers with a flicker of his tongue, and thought fast.

"Bass?" he said. "In a creek?"

"Never know what you'll catch," said the native. "Might as well fish for bass as anything else. You from around here?"

"Not close," said Kator. He felt on firmer ground now. While he knew something about the fishing habits and jargon of the local natives—the matter of who he was and where from had been rehearsed.

"City?" said the native.

"That's right," said Kator. He thought of the planet-wide city of the Ruml Homeworld.

"Headed where?"

"Oh," said Kator, "just thought I'd cut around the complex up there, see if I can't hit a main road beyond and catch a bus back to town."

"You can do that, all right," said the native. "I'd show you the way, but I've got fish to catch. You can't miss it, anyway. Ahead or back from here both brings you out on the same road."

"That so?" said Kator. He started to move off. "Well, thanks."

"Don't mention it, friend."

"Good luck with your bass."

"Bass or something—never tell what you'll catch."

Kator waved. The native waved and turned back to his contemplation of the creek. Kator went on.

Only a little way down the dirt road, around a bend and through some trees he came on the wide wire gate where the road disappeared into the complex. The gate was closed and locked. Kator glanced about him, saw no one and took a small silver cone from his pocket. He touched the point of the cone to the lock. There was a small, upward puff of smoke and the gate sagged open. Kator pushed through, closed the gate behind him and headed for the building which the truck holding the Ruml collector had entered.

The door to the building also was locked. Kator used the cone-shaped object on the lock of a small door set into the big door and slipped inside. He found himself in a small open space, dim-lit by high windows in the building. Beyond the open space was the end of the conveyor belt on which the food boxes had been discharged, and a maze of machinery.

Kator listened, standing in the shadow of the door. He heard nothing. He put away the cone and drew his handgun. Lightly, he leaped up on to the still conveyor belt and began to follow it back into the clutter of machinery.

It was a strange, mechanical jungle through which he found himself traveling. The conveyor belt was not a short one. After he

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had been on it for some minutes, his listening ears caught sound from up ahead. He stopped and listened.

The sound was that of native voices talking.

He went on, cautiously. Gradually he approached the voices, which did not seem to be on the belt but off it to the right some little distance. Finally, he drew level with them. Kneeling down and peering through the shapes of the machinery, he made out a clear area in the building about thirty feet off the belt. Behind the cleared area was a glassed-in cage in which five humans wearing blue uniforms and weapon harnesses supporting handguns, could be seen—sitting at desks and standing about, talking.

Kator lowered his head and crept past like a shadow on the belt. The voices faded a little behind him and in a little distance, he came to the shaft and the elevator platform on to which the conveyor belt discharged its cargo.

Kator examined the platform with an eye already briefed on its probable construction. It was evidently remotely controlled from below, but there should be some kind of controls for operating it from above—if only emergency controls.

Kator searched around the edge of the shaft, and discovered controls set under a plate at the end of the conveyor belt. Using a small magnetic power tool, he removed the plate covering the connections to the switches and spent a moment or two studying the wiring. It was not hard to figure it out from this end—but he had hoped to find some kind of locking device, such as would be standard on a Ruml apparatus of this sort, which would allow him to prevent the elevator being used after he himself had gone down.

But there was no such lock.

He replaced the plate, got on to the platform and looked at the controls. From this point on it was a matter of calculated risk. There was no way of telling what in the way of guards or protective devices waited for him at the bottom of the shaft. He had had his choice of trying to find out with collectors previously and running the risk of alerting the natives—or of taking his chances now. And he had chosen to take his chances now.

He pressed the button. The platform dropped beneath him, and the darkness of the shaft closed over his head.

The platform fell with a rapidity that frightened him. He had a flashing mental picture of a being designed for only nonhuman materials—and then thought of the damageable fruits and vegetables among its food cargo came to mind and reassured him. Sure enough—after what seemed like a much longer drop than the burrowing scanners had reported the shaft

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to have—the platform slowed quickly but evenly to a gentle halt and emerged into light from an opening in one side of the shaft.

Kator was off the platform the second it emerged, and racing for the nearest cover—behind the door of the small room into which he had been discharged. And no sooner than necessary. A lacework of blue beams lanced across the space where he had been standing a tiny part of a second before.

The beams winked out. The smell of ozone filled the room. For a moment Kator stood frozen and poised, gun in hand. But no living creature showed itself. The beams had evidently been fired automatically from apertures in the wall. And, thought Kator with a cold feeling about his liver, the spot he had chosen to duck into was about the only spot in the room they had not covered.

He came out from behind the door, slipped through the entrance to which it belonged—and checked suddenly, catching his breath.

He stood in an underground area of unbelievable dimensions, suddenly a pygmy. No, less than a pygmy, an ant among giants, dimlit from half a mile overhead.

He was at one end of what was no less than an underground spacefield. Towering away from him, too huge to count, were the brobdingnagian shapes of great spaceships. He had found it—the secret gathering place of the strength of the Muffled People.

From up ahead came the sound of metal on other metal and concrete, sound of feet and voices. Like a hunting animal, Kator slipped from the shadow of one great shape to the next until he came to a spot from which he could see what was going on.

He peered out from behind the roundness of a great, barrel-thick supporting jack and saw that he was at the edge of the field of ships. Beyond stretched immense emptiness, and in a separate corner of this, not fifty feet from where Kator stood, a crew of five natives in green one-piece mufflings were dismounting the governor of a phase-shift drive from one of the ships, which had been taken out of the ship and lowered to the floor here, apparently for servicing. A single native in blue with a weapons harness and handgun stood by them.

As Kator stopped, another native in blue with weapons harness came through the ranked ships from another direction. Kator shrank back behind the supporting jack. The second guard came up to the first.

"Nothing." He said. "May have been a short up in the powerhouse. Anyway, nothing came down the shaft."

"A rat, maybe?" said the first guard.

"No. I looked. The room was empty. It would've got caught by the beams. They're checking upstairs, though."

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Kator slipped back among the ships.

The natives were alerted now, even if they did not seriously suspect an intruder like himself. Nonetheless, a great exultation was welling up inside him. He had prepared to break into one of the ships to discover the nature of its internal machinery. Now—thanks to the dismantled unit he had seen being worked on, that was no longer necessary. His high hopes, his long gamble, were about to pay off. His kingdom was before him.

Only two things were still to be done. The first was to make a visual record of the place to take Home; and the other was to get himself safely out of here and back to his small ship.

He took a hand recorder from his weapons belt and adjusted it. This device had been in operation as recording his immediate vicinity ever since he had set foot outside his small ship. But adjustments were necessary to allow it to record the vast shapes and spaces about him. Kator made the necessary adjustments and for about half an hour flitted about like an entertainment-maker, taking records not only of the huge ships, and their number, but of everything else about this secret underground field. It was a pity, he thought, that he could not get up to also record the structure of the ceiling lost overhead in the brightness of the half-mile distant light sources. But it went without saying that the Muffled People would have some means of letting the ships out through the apparently solid ground and buildings overhead.

Finished at last, Kator worked his way back to the room containing the elevator shaft. Almost, in the vast maze of ships and jacks, he had forgotten where it was, but the sense of direction which had been part of his scoutship training paid off. He found it and came at last back to its entrance.

He halted there, peering at the platform sitting innocuously waiting at the shaft bottom. To cross the room to it would undoubtedly fire the automatic mechanism of the blue beams again—which aside from the danger that posed, would this time fully alert the blue-clad natives with the weapons harnesses.

For a long second Kator stood, thinking with a rapidity he had hardly matched before in his life. Then a far-fetched scheme occurred to him. He knew that the area behind the door was safe. From there, two long leaps would carry him to the platform. If he with his different Ruml muscles, could avoid that single touching of the floor, he might be able to reach the platform without triggering off the defensive mechanism. There was a way but it was a stake-everything sort of proposition. If he missed, there would be no hope of avoiding the beams.

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The door opened inward, and it was about six feet in height, three and a half feet in width. From its most inward point of swing it was about twenty-two feet from the platform. Reaching in, Kator swung it at right angles to the entrance, so that it projected into the room. Then he backed up and took off his foot coverings, tucking them into pouches of his mufflings.

He got down on hands and feet and arched his back. His claws extended themselves from fingers and toes, clicking on the concrete floor. For a moment he fe t a wave of despair that the clumsy mufflings hampering him would make the feat impossible. But he resolutely shoved that thought from his mind. He backed up further until he was a good thirty feet from the door.

He thought of his kingdom and launched himself forward.

He was a young adult Ruml in top shape. By the time he had covered the thirty feet he was moving at close to twenty miles an hour. He launched himself from a dozen feet out for the entrance and flew to the inmost top edge of the door.

He seemed barely to touch the door in passing. But four sets of claws clamped on the door, making the all-important change in direction and adding additional impetus to his flying body. Then the platform and the shaft seemed to fly to meet him and he slammed down on the flat surface with an impact that struck the breath from his body.

The beams did not fly. Half-dazed, but mindful of the noise he had made in landing, Kator fumbled around the edge of the shaft for the button he had marked from the doorway, punched it, and felt the platform thrust him upward.

On the ride up he recovered his breath. He made no attempt to replace the clumsy foot-coverings and drew his handgun, keeping it ready in his hand. The second the platform stopped at the top of the shaft he was off it and running noiselessly back along the conveyor belt at a speed which no native would have been able to maintain in the crouched position in which Kator was holding himself.

There were sounds of natives moving all about the factory building in which he was—but for all that he was half-persuaded that he still might make his escape unobserved, when a shout erupted only about a dozen feet away within the maze of machinery off to his left.

"Stop there! You!"

Without hesitation, Kator fired in the direction of the voice and dived off the conveyor belt into a tangle of gears at his right. Behind him came a groan and the sound of a falling body and a blue beam lanced from another direction through the spot where he had stood a second before.

A dozen feet back in the mechani-

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cal maze, Kator clung to a piece of ductwork and listened. His first impression had been that there were a large number of the natives searching the building. Now he heard only three voices, converging on the spot where the first voice had hailed him.

"What happened?"

"I thought I saw something—" the voice that had hailed Kator groaned. "I tried to get a clear shot and I slipped down in between the drums, here."

"You jammed in there?"

"I think my leg's broke."

"You say you saw something?"

"I thought I saw something. I don't know. I guess that alarm had me seeing things—there's nothing on the belt now. Help me out of here, will you!"

"Give me a hand, Corry."

"Easy—take it *easy!*"

"All right . . . All right. We'll get you in to the doctor."

Kator clung, listening, as the two who had come up later lifted their hurt companion out of wherever he had fallen, and carried him out of the building. Then there was nothing but silence; and in that silence, Kator drew a deep breath. It was hardly believable; but for this, too, the Morahnpa had had a saying—*Perfection attracts the Random Factor—favorably as well as unfavorably.*

Quietly, Kator began to climb back toward the conveyor belt. Now that he could move with less urgency, he saw a clearer route to it. He clambered along and spotted a straight climb along a sideways-sloping, three-foot wide strip of metal filling the gap between what seemed to be the high side of a turbine and a narrow strip of darkness a foot wide alongside more ductwork. The strip led straight as a road to the open area where the conveyor belt began, and there was the door where Kator had originally entered.

Perfection attracts the Random Factor. . . . Kator slipped out on the strip of metal and began to scuttle along it. His claws scratched and slipped. It was slicker than he had thought. He felt himself sliding. Grimly, in silence, he tried to hold himself back from the edge of darkness. Still blunting his claws ineffectually on the polished surface, he slid over the edge and fell—

To crashing darkness and oblivion.

When he woke, he could not at first remember where he was. It seemed that he had been unconscious for some time but far above him the light still streamed through the high windows of the building at the same angle, almost, as when he had emerged from the platform on his way out. He was lying in a narrow gap between two vertical surfaces of metal. Voices suddenly struck strongly on his ear —the voices of two natives standing in the open space up ahead between Kator and the door.

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"Not possible," one of the voices was saying. "We've looked everywhere."

"But you left the place to carry Rogers to the infirmary?"

"Yes, sir. But I took him in myself. Corry stood guard outside the door there. Then, when I came back we searched the whole place. There's no one here."

"Sort of a funny day," said the second voice. "First, that short or whatever it was, downstairs, and then Rogers thinking he saw someone and breaking his leg." The voice moved off toward the door. "Well, forget it, then. I'll write it up in my report and we'll lock the building behind us until an inspector can look it over."

There was the sound of the small door in the big truck door opening.

"What's anybody going to steal, anyway?" said the first voice, following the other through the door. "Put a half million tons of spaceship under one arm and carry it out?"

"Regulations . . ." the second voice faded away into the outdoors as the door closed.

Kator stirred in his darkness.

For a moment he was afraid he had broken a limb himself. But his leg appeared to be bruised, rather than broken. He wriggled his way forward between the two surfaces until some other object blocked his way. He climbed up and over this—more ductwork yet, it seemed—and emerged a second later into the open area.

The local sun was well up in the center of the sky as he slipped out of the building. No one was in sight. At a half-speed, limping run, Kator dodged along in the shade of an adjoining building; and a couple of minutes later he was safely through the gate of the complex and into the safe shelter of the trees paralleling the dirt road—headed back toward his ship.

The native fisherman was no longer beside the creek. No one at all seemed to be in sight in the warm day. Kator made it back to his ship; and, only when he was safely inside its camouflaged entrance, did he allow himself the luxury of a feeling of safety. For—at that—he was not yet completely safe. He simply had a ship in which to make a run for it, if he was discovered now. He throttled the feeling of safety down. It would be nightfall before he could risk taking off. And that meant that it must be nightfall before he took the final step in securing his kingdom.

He got rid of the loathsome mufflings he had been forced to wear and tended to his wrenched leg. It was painful, but it would be all right in a week at most. And he could use it now for any normal purpose. The recorder he had been carrying was smashed—that must have happened when he had the fall in the building. However, the record of everything he had done up to that moment would be still available within the recording element. No more was needed back

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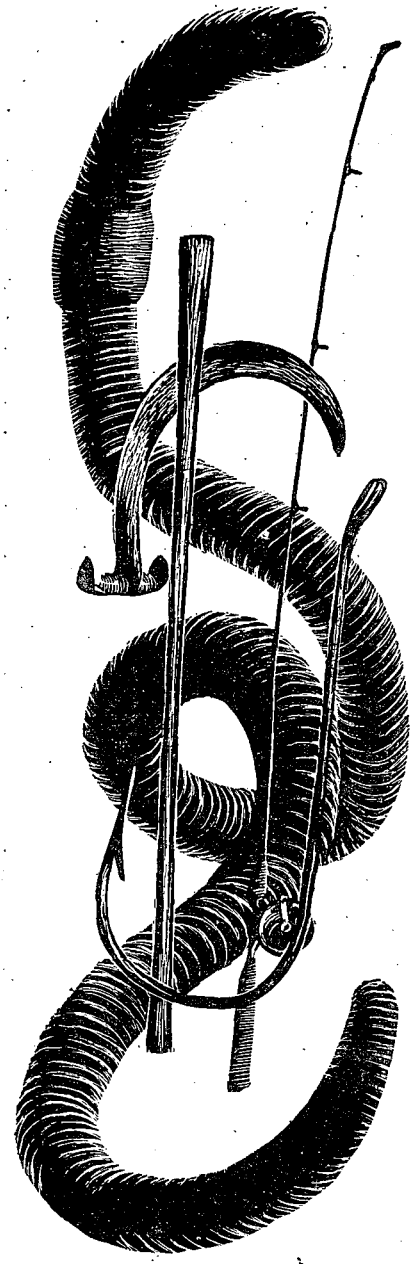

Home. Now, if only night would fall!

Kator limped restless back and forth in the restricted space of the small ship as the shadows lengthened. At last, the yellow sun touched the horizon and darkness began to flood in long shadows across the land. Kator sat down at the communications board of his small ship and keyed in voice communication alone with the Expedition Headquarters on the moon.

The speaker crackled at him.

"Keysman?"

He said nothing.

"Keysman? This is the Captain? Can you hear us?"

Kator held his silence, a slight smile on his Ruml lips.

"*Keysman!*"

Kator leaned forward to the voice-collector before him. He whispered into it.

"No use—" he husked brokenly, "natives . . . surrounding me here. Captain—"

Kator paused. There was a moment's silence, and then the Captain's voice broke in.

"Keysman! Hold on. We'll get ships down to you and—"

"No time—" husked Kator. "Destroying self and ship. Get Home . . ."

He reached out to his controls and sent the little ship leaping skyward into the dark. As it rose, he fired a cylindrical object back into the ground where it had lain. And, three seconds later, the white,

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actinic glare of a phase-shift explosion lighted the landscape.

But by that time, Kator was drilling safely upward through the night darkness.

He took upwards of four hours, local time, to return to the Expedition Headquarters. There was no response as he approached the surface above the hidden ship and its connected network of room excavated out of the undersurface. He opened the passage that would let his little ship down in, by remote control, and left the small ship for the big one.

There was no one in the corridors or in the outer rooms of the big ship. When Kator got to the gathering room, they were all there, lying silent. As he had expected, they had not followed his orders to return to the Ruml Homeworld. Indeed, with the ship locked and the Keys lost with their Keysman, they could not have raised ship except by an extreme butchery of their controls, or navigated her once they had raised her. They had assumed, as Kator had planned, that their Keysman—no doubt wounded and dying on the planet below—had been half-delirious and forgetful of the fact he had locked the ship and taken her keys.

With a choice between a slow death and a fast, they had taken the reasonable choice; and suicided politely, with the lesser ranks first and the Captain last.

Kator smiled, and went to examine the ship's recorder. The Captain had recited a full account of the conversation with Kator, and the Expedition's choice of action. Kator turned back to the waiting bodies. The Expedition's ship had cargo space. He carried the dead bodies into it and set the space at below freezing temperature so that the bodies could be returned to their families—that in itself would be a point in his favor when he returned. Then he unlocked the ship, and checked the controls.

There was no great difference between any of the space-going vessels of the Ruml; and one man could handle the large expedition ship as well as the smallest scout. Kator set a course for the Ruml Homeworld and broke the ship free of the moon's surface into space.

As soon as he was free of the solar system, he programmed his phase shift mechanism, and left the ship to take itself across immensity. He went back to his own quarters.

There, things were as they had been before he had gone down to the planet of the Muffled People. He opened a service compartment to take out food, and he lifted out also one of the alcohol-producing cultures. But when he had taken this last back with the food to the table that held his papers, badges, and the cube containing the worm; he felt disinclined to swallow the culture.

The situation was too solemn, too great, for drunkenness.

He laid the culture down and took up the cube containing the

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worm. He held it to the light above the table. In that light the worm seemed almost alive. It seemed to turn and bow to him. He laid the cube back down on the table and walked across to put his smashed recording device in a resolving machine that would project its story onto a life-size cube of the room's atmosphere. Then, as the lights about him dimmed, and the morning he had seen as he emerged from his small ship the morning of that same day, he hunkered down on a seat with a sigh of satisfaction.

It is not every man who is privileged to review a few short hours in which he has gained a Kingdom.

The Expedition ship came back to the Ruml Homeworld, and its single surviving occupant was greeted with the sort of excitement that had not occurred in the lifetime of anyone then living. After several days of due formalities, the moment of real business arrived, and Kator Secondcousin Brutogas was summoned to report to the heads of the fifty great families of the Homeworld. Now those families would number fifty-one, for the Brutogas would after this day—at which he was only an invited observer—be listed among their number. Fifty-one long-whiskered male Ruml, therefore, took their seats in a half-circle facing a small stage, and out onto that stage came Kator Secondcousin to salute them all with claws over the region of his heart.

"Keysman," said the eldest family head present, "give us your report."

Kator saluted again. His limp was almost gone now, but his whiskers were barely grown a few inches. Also, he seemed to have lost weight and aged on the Expedition.

"My written report is before you, sirs," he said. "As you know we set up a headquarters on the moon of the planet of the Muffled People. As you know, my Captain and men, thinking me dead, suicided. As you know, I have returned."

He stopped talking and saluted again. The family heads waited in some surprise. Finally, the eldest broke the silence.

"Is that *all* you have to say, Keysman?"

"No, sirs," said Kator. "But I'd like to show you the recording I made of the secret place of the Muffled People before I say anything further."

"By all means," said the eldest family head. "Go ahead."

Kator saluted again, and put the smashed recorder into a resolving machine at one edge of the stage. He stood beside it while the heads of the great families watched the incidents from Kator's landing to the moment of his fall in the factory building that had smashed the recorder.

"After I fell," said Kator, as he switched the resolving machine off beside him, "I came to to hear two natives discussing the fact they had

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been unable to find anyone prowling about. They left, and I got away, back to my small ship. From then on, it was simple. I waited until darkness ensured that it was safe for me to take off unnoticed. Then I armed the device I had rigged to simulate a small phase-shift explosion, and called Expedition Headquarters. As I'd planned, my voice-message and my imitation explosion with its indication that the ship's keys were lost for good, left the rest of the Expedition no choice but polite suicide. I gave them ample time to do so before I re-entered the Expedition ship and headed her Home."

Kator stopped talking. There was a remarkable silence from the fifty-one faces staring at him for a long moment—and then a rising mutter of question and incredulity. The strong voice of the eldest family head cut across this.

"Are you telling us you *planned* the suicides of your Captain and men?"

Kator's face twisted in a sudden, apparently uncontrollable fashion. Almost as if he had been ready to laugh.

"Yes, sir," he said. "I planned it."

There was another dead silence.

"In the name of . . . *why?*" burst out the eldest. At one s de of the half-circle of faces, the face of The Brutogas looked stricken with paralysis.

Kator's face twisted again.

"Our ancestor, The Morahnpa," he said, "once ensured the conquest of a world and a race by his own individual actions. Because of this, and to encourage others who might do likewise, the principle was laid down that whoever might match The Morahnpa's action, might have, as The Morahnpa did, complete sovereignity over the *natives* of such a conquered world, after the conquest was accomplished. That is—other men might be entitled to take their advantages of the world and race itself. But its true conqueror, during his lifetime, would be the final authority on the planet."

"What's history got to do with this?" It was noticeable that the use of Kator's title of Keysman had begun to be forgotten by the eldest of the family heads. "The Morahnpa not only earned his right to a world, he was in such a position that the world could not be taken without his assistance."

"Or the Muffled People's world without mine," said Kator. "I had intended to return with a situation that was quite clear-cut. I left our base on the moon unhidden when I returned. It would be bound to be discovered within a limited time. During that limited time, I would offer my knowledge of where the place of strength of the Muffled People was—in turn for the planet of the Muffled People being granted to me as my kingdom—as his world was to The Morahnpa."

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"In that case," said the eldest, "you made a mistake in showing us your recording."

"No," said Kator. "I've renounced my ambition."

"Renounced?" The fifty-one faces watched Kator without moving as the eldest spoke. "Why?"

Kator's face twitched again.

"Let me show you the rest of the recording."

"The rest—" began the eldest. But Kator was already turning to the resolving machine. He turned it on.

For a second there was nothing to be seen—only the bright flicker of a destroyed recording. Then, this cleared magically and the fifty-one found themselves looking at a native of the Muffled People—the same who had spoken to Kator earlier on the recording.

He took the container of burning vegetation out of his mouth, knocked the vegetation out of it on a rock beside him, overhanging the creek, and put the pipe away. Then he addressed them in perfect Ruml.

"Greetings," he said. "To all, and particularly to those heads of leading families who are viewing this. As you possibly already know, I am a member of that race you Ruml refer to as Muffled People, but which are correctly called humans"— he pronounced the native word carefully for them— "*Heh-eu-manz*. With a little practice you'll find it not hard at all to say."

There was the beginning of a babble from the semicircle of seats.

"*Quiet!*" barked the eldest head of family.

". . . We humans," the native was saying, smiling at them, "have quite a warlike history, but we really don't like wars. We prefer to be independent, but on good terms with our neighbors. Accordingly, let me show you some of the means we've developed to obtain our preference."

The scene changed suddenly. The assembled Ruml saw before them one of the small, long-tailed, scavenging animals Kator had used as collectors. This was smaller than Kator's and white-furred. It was nosing its way up and down the corridors of a topless box—here being baffled by a dead end corridor, there finding an entrance through to an adjoining corridor.

"This," said the voice of the native, "is a device called a 'maze' used to test the intelligence of the experimental animal you see. This device is one of the investigative tools used in our study of a division of knowledge known as 'psychology'—which corresponds to a certain extent with the division of knowledge you Ruml refer to as Family-study."

The scene changed back to the native on the creekbank.

"Psychology teaches us humans many useful things about how other organisms must react—this is because it is founded upon basic and universal desires, such as the

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urge of the individual or the race to survive."

He lifted the pole he held.

"This," he said, "though it was used by humans long before we began to study psychology consciously, operates upon psychological principle—"

The view slid out along the rod, down the line attached to its tip, and through the surface of the water. It continued underwater down the line to a dirt worm like the one in Kator's cube. Then it moved off to the side a few inches and picked up the image of a native underwater creature possessing no limbs, but a fan-shaped tail and minor fans farther up the body. The creature swam to the worm and swallowed it. Immediately it began to struggle and a close-up revealed a barbed metal hook in the worm. The creature, however, for all its struggling was drawn up out of the water by the native, who hit it on the head and put it in a woven box.

"You see," said the native, cheerfully, "that this device makes use of the subject's—a 'fish' we call it—desire to survive, on a very primitive level. To survive the fish must eat. We offer it something to eat, but in taking it, the fish delivers itself into our hands, by fastening itself to the hook attached to our line.

"All intelligent, space-going races we have encountered–so far seem to exhibit the universal desire to survive. To survive, most seem to believe that they must dominate any other race they encounter, or risk domination themselves. Our study of psychology shows that this is a false assumption. To maintain its domination over another intelligent race, a race must eventually bankrupt its resources, both physical and non-physical. However—it is entirely practical for one race to maintain its domination long enough to teach another race that domination is impractical.

"The worm on my hook," he said, "is known as 'bait'. The worm you found in the wreckage of the human spaceship was symbolic of the fact that the wreckage itself was bait. We have many such pieces of bait drifting outwards from our area of space here. And as I told Kator Secondcousin Brutogas, you never can tell what you'll catch. The object in catching, of course, is to be able to study what takes the bait. Now, when Kator Secondcousin took the spaceship wreckage in tow, there was a monitor only half a light-year away that notified us of that fact. Kator's path home was charted and we immediately went to work, here.

"When your expeditionary ship came, it was allowed to land on our moon and an extensive study was made not only of it, but of the psychology of the Rumls you sent aboard it. After as much could be learned by that method as possible, we allowed one of your collectors to find our underground launching

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site and for one of your people to come down and actually enter it.

"We ran a number of maze-level tests on Kator Secondcousin while he was making his entrance to and escaping from the underground launching site. You'll be glad to hear that your Ruml intelligence tests quite highly, although you aren't what we'd call maze-sophisticated. We had little difficulty influencing Kator to leave the conveyor belt and follow a route that would lead him onto a surface too slippery to cross. As he fell we rendered him unconscious—"

There was a collective sound, half-grunt, half gasp from the listening Ruml audience.

"And, during the hour that followed, we were able to make complete physical tests and studies of an adult male Ruml. Then Kator was put back where he had fallen and allowed to return to consciousness. Then he was let escape."

The human got up, picked up his rod, picked up his woven basket with the underwater creature inside, and nodded to them.

"We now," he said, "know all about you. And you, with the exception of Kator, know nothing about us. Because of what we have learned about your psychology, we are confident that Kator's knowledge will not be allowed to do you any good." He lifted a finger. "I have one more scene to show you."

He vanished, and they looked instead into the immensity of open space. The constellations were vaguely familiar and those who had had experience recognized the spatial area as not far removed from their own planetary system. Through this star-dimness stretched inconceivable great shape followed by great shape, like dark giant demons waiting.

"Kator," said the voice of the native, "should have asked himself why there was so much empty space in the underground launching area. Come see us on Earth whenever you're ready to talk."

The scene winked out. In the new glare of the lights, the fifty-one proud heads of families stared at Kator Secondcousin, who stared back. Then, as if at some unconscious signal, they rose as one man and swarmed upon him.

"You fools!" cackled Kator with a Ruml's mad laughter, as he saw them coming at him. "Didn't he say you wouldn't have any use of what I know?" He went down under their claws. "Force won't work against these people—that's what he was trying to tell you! Why do you have to take the bait just the way I did—"

But it was no use. He felt himself dying.

"All right!" he choked at them, as a red haze began to blot out the world about him. "Learn the hard way for yourselves. Killing me won't do any good . . ."

And of course he was quite right. It didn't. ■

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Philosopher's Stone

The Philosopher's Stone, you recall, was not itself gold — it simply made gold of whatever it touched. And that — in somewhat more subtle terms — is all a culture needs...

by Christopher Anvil

Illustrated by Schelling

Dave Blackmer was an interstellar courier, paid to deliver the almost microscopically-reduced electronic message banks which, on arrival at the branch offices of Terran corporations, yielded up confidential instructions and technical data from the home offices and giant laboratories back on Earth. Since the banks were theoretically stealable, certain key messages were given to Dave in deep hypnosis, and passed on by him in the same state when he reached the planet of destination. For Dave, the job itself was routine. Most of the travel was done in fast commercial spacers, the monotony varied by rare moments when hair-trigger reflexes and hidden weapons made a shambles of a highjacker's attempt at the message banks. Between such moments, he had time to consider a peculiar effect of

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his job that the company recruiter had warned him about before he took the job.

"Now, don't ask me to explain it," the recruiter had said, "but Einstein's theory predicts it, and our experience proves it. The faster you go, the slower the passage of time. At the speeds you'll be traveling, you've got to take this into account. Are you willing to do it?"

"What's it involve?"

"Well, suppose you're married. You go out on the fastest ship available, make two or three subspace jumps, travel at top velocities, deliver the banks, load up for return, and in six weeks total you're back to report to the head office. The calendar in the office says one year and two months have elapsed since you left."

"You mean I'm a year two months older than when I left, and it only seemed like six weeks to me?"

"No, you're only six weeks older. The people *here* are a year two months older. They've lived that long while you were away for six weeks of *your* time."

Dave shrugged. "What does it matter when I live the rest of the fourteen months? I haven't lost anything."

"No, but remember, we said. 'Suppose you're married.' You've been away six weeks, as far as you're concerned. But that was a year and two months on Earth. You're married, and the little woman is conscious of having cooled her heels in solitary neglect for four hundred and twenty-five days and nights. You see what I mean?"

Dave nodded. "That's not so good."

The recruiter said, "In this business, marriage isn't worth it, believe me. But there are compensations, if you're interested in making money."

"High pay?"

"The pay is terrible. You'd do a lot better running a desk in an automatic factory."

"How much?"

"Five thousand a year, to start."

Dave turned as if to leave.

"Of course," added the recruiter, "you collect that five thousand at least half-a-dozen times a year."

Dave turned back and stared at him. The recruiter grinned. "We call it the 'accordion effect.' On Earth, time is stretched out like an accordion pulled wide. At high velocity, time is shortened like an accordion squeezed shut. On the company's books, you get paid by the calendar year. But throughout most of the calendar year, you're making subspace jumps and traveling at ultrahigh velocity in the course of your work. You experience the passage of, say, five to six weeks, between the time you leave and the time you get back. Meanwhile, on Earth, the calendar year has elapsed, because of the higher rate of flow of time on a slow-moving object. So after five to

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six weeks' work, you get a year's pay. Nice, huh?"

And that had been Dave's introduction to the "accordion effect." Other delightful aspects had shown up later. Though Dave was earning at least thirty thousand a year, from his viewpoint, the government saw this as a mere five thousand a year, repeated six times; the government was thus content to go after his paychecks with a moderately loose net, rather than with the harpoons, axes, and big knives they would otherwise have used. Conversely, though from Dave's viewpoint only a year had passed on the job, from the viewpoint of his bank, the interest on his money had been compounding, piling up, and reproducing itself for half-a-dozen years.

At first, Dave's only worry was that some technological development would eliminate his job. Then he began to notice other results of the accordion effect: the apparently accelerated aging of Earthbound acquaintances; the stepping up, from Dave's viewpoint, of social and technological changes; the perceptible shift of position and power among the peaceable but still strenuously competing nations on the home planet. These, and the sudden emergence of totally unexpected developments, kept Dave constantly aware of the difference in viewpoint that his job brought about.

And now there was a new change. For the first few years—from his viewpoint—Dave had traveled in the fastest American and Soviet ships. Of late, however, his trips more and more often were made in spacers like the *Imperial Banner*, the *Unicorn*, the *Lion*, and the *Duke of Richmond*. He was currently aboard the *Queen of Space*, which was hurtling him from Transpluto Terminal to Aurora Shuttle-Drop with a time-lead of twelve hours fifty-seven minutes over the next fastest transportation. Some idea of life on the *Queen* could be deduced in advance from the first lines of the shipping company's brochure:

"With three grades of accommodation: magnate class, luxury class, and first class, the new liner *Queen of Space* fulfills your fondest expectations . . ."

But Dave had been unable to foresee all of it. With one hand behind him on the silver doorknob of the first-class lounge, he stepped into the corridor and glanced to his left to see, strolling toward him down the corridor, two elegantly-dressed young men, a little above medium height. They were spare, well-knit, and groomed to perfection. Dave, who seldom noticed clothes, became oppressively aware of their perfectly-tailored jackets, knife-creased trousers, and black shoes polished to mirror brightness. They favored Dave with a brief flick of a glance as they passed, leaving him conscious of his improperly-knotted tie, un-

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suitable tan sport jacket and slacks, and too thick-soled shoes. Dave bore up under it grimly, conscious that the trip would not last forever and that after seven or eight more trips, the accordon effect would probably present him with some new phenomenon.

A good-natured middle-aged man, carrying a thing like a small riding crop with a silver handle, moved out beside Dave at the doorway, cast a cool glance after the elegant pair, nodded to Dave, and walked down the corridor, carrying the crop turned up inconspicuously against the cloth of his sleeve. From the opposite direction, a beautifully-dressed fop strolled by with a swagger stick. Then two men went past deep in conversation.

"No, no," one was saying earnestly. "I'd have been stuck there for life. A stinking baronet. But I found Carter. He was nobody, then. Nobody. But I saw a possibility. Nothing more, mind you. Just a possibility. And I—"

They disappeared around the corner. From their direction came a thickset man with beet-red cheeks carrying a swagger stick. No, Dave saw, a gold-encrusted baton of some kind—and everyone else in the corridor bowed and stood aside till he passed, whereupon the conversation, respectfully subdued, sprang up again, and the traffic in the hall got moving.

Dave noted that the courtesy was more elaborate then it had been on previous trips. The social phenomenon, whatever it was, must be coming to full bloom. He watched the hustling crowd go past, and became aware of a feeling of loneliness.

Someone banged into Dave, muttered an apology in a strained, suffering voice, and started past into the crowded entrance of the first-class lounge. Dave muttered an automatic acceptance of the apology, started out into the corridor, then hastily changed direction as some grandee came around the corner and they all stood against the wall for him.

Growling under his breath, Dave shoved back out of the way into the lounge, banged somebody, apologized, heard a muttered, "Sure. Sure. That's all right. Never mind," whirled and caught sight of a man in a dark business suit with a thick stubble of beard and horn-rimmed glasses. Dave immediately grabbed him by the arm. The man whirled around, a grim long-suffering look on his face.

From the corridor and all around them came snatches of greetings and conversation:

". . . Beg pardon, your Grace . . ."

". . . Be delighted, Sir Philip. I'm much indebted to you . . ."

". . . Lot of plebeian rot, my lord. Hogwash. Income tax, indeed . . ."

". . . Well, that put me one step up the ladder, but I never

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hoped to lay hold on the swagger stick till—"

". . . No, no. What a bore. I wouldn't dream of it . . ."

". . . Best be up and doing, eh, your Grace? One day a commoner, next a baron, and pretty soon . . ."

"'. . . Tongue, you insolent dog,' I said. 'Your rank was bequeathed. It's no greater than mine, and it's on the slide. Your children will be commoners . . .'"

The man Dave had by the arm was staring at him as at some friend temporarily forgotten, but whose features were agonizingly familiar.

Dave said in a low voice, "You're Anatoly Dovrenin. A courier for Sovcom. Right?"

The man nodded. He said suddenly, "I've seen you. Wait—You're David Blackmer? Interstellar Communications Corporation?"

"Correct."

Dovrenin thrust out his hand. Dave grabbed it. They shook hands with the sincerity of two nineteenth-century midwesterners in a Boston drawing room. The instant they paused the bits and fragments of conversation washed over them again.

". . . Reconversion dynamometer. Well, I thought, that's good for a step up if I can twist it around a bit, so . . ."

". . . Incredible callousness. The chap was only a rung above me, you know. It wasn't the snub, it was the way he did it. So offhand. As if I didn't *exist* . . ."

". . . Of course, my dear fellow. Yes, yes. I assuredly will remember you. Now if you'll excuse me . . . Pardon, gentlemen . . ."

". . . Lord Essenden, you've met Sir Dene Swope? . . . Splendid . . . Now, if we can find a quiet seat in a corner somewhere . . ."

Dovrenin glanced around and muttered, "It's getting crowded in here."

Dave nodded, "I know exactly what you mean. My room's just down the hall. If you can spare a minute—"

Dovrenin brightened. "I've got a big collection of cheeses they gave me at home for a going-away present. Also, naturally, I have some Vodka. How about—"

"Good idea."

"But, I haven't got any crackers. There was a little slip in the five-year plan, and ah . . ."

Dave nodded knowingly. "I'll go down to the commissary and pick up a couple of boxes. Incidentally, I'm in 226."

"I'll be there. My room is 280, so it will take me a few minutes."

They parted, Dovrenin going up the corridor, and Dave down it toward the gravity drop to the commissary. A few minutes later he was carrying the crackers and on his way back, meditating on the effect of the change in the exchange rate from six dollars a pound to seven twenty-eight a pound.

Thus preoccupied, Dave failed to notice a sudden hush in the corridor

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as everyone stood back respectfully against the walls. Dave walked past unaware. An elaborately-dressed fop drew his breath in with a hiss, grabbed Dave's arm with one hand, and slapped him across the face with the other.

Dave instinctively grabbed the man by the shirt front and knocked his unconscious form fifteen feet down the corridor.

There was a dead silence.

Dave picked up the crackers.

Coming toward him down the hall was the man with the riding crop that Dave had seen earlier. He smiled at Dave. Dave smiled at him. Dave walked down the hall with the accumulated gaze of many eyes focused on the back of his neck.

As he approached his room, he could see Anatoly Dovrenin coming down the hall from the opposite direction, carrying a box so large that he could see only by looking around one side of it. Behind Dovrenin, a door opened. People jumped to right and left to stand courteously waiting against the wall as a skinny individual carrying a silver-and-gold-encrusted baton emerged from a room behind Dovrenin, to walk behind him in deep conversation with a short fat man who was obviously paralyzed by greatness, and able only to bob his head and say, "Yes, Yes."

Dovrenin, peering around one side of the box, clearly had no idea what was behind him, till a gorgeously-dressed young man indignantly slammed him to the wall, knocking the box to the floor. Dovrenin waited with downcast gaze as the baton-bearing celebrity went past. There was a blur of motion as people began to move, then the magnificently-dressed young man appeared carrying the box, his expression blank, and Dovrenin right behind him with his hand holding something bulky in a side pocket.

Dave opened the door. The big box was carried in and set on the bed. Dovrenin's companion favored Anatoly and Dave with a hard look, and left the room.

Dave shut the door. Dovrenin carried over a chair and jammed it under the door's silver knob.

"I'm not very popular here right now."

Dave nodded. "My own circle of friends is strictly limited."

Dovrenin went to the box, and glanced around. Dave followed his glance:

The room, done in an exotic combination of silver and New Venus mahogany, had a bed, a chest of drawers, a table, three straight chairs, a large mirror, a plush armchair, and a thing like a wide-screen TV set. Another door, partly open, gave a view into a luxuriously-fitted bathroom.

Dovrenin glanced around, saw the two big boxes of crackers, and beamed. "You had no trouble?"

"No. I'd hardly touched my travel allowance. But if that exchange rate keeps going up—"

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"It will," said Dovrenin grimly. "We have information that the next jump would put it at about $8.40 a pound. It may be higher yet when we get back."

Dave winced, then shrugged. "No need to worry about that now." He pulled a couple of boxes out from under his bed, Dovrenin in turn began to unload his own huge box. The table was soon laden with a variety of edible delicacies, and an assortment of liquids in different sizes and shapes of bottles. Various packets, cartons, and little boxes appeared, packed with delicate white cigarettes, and big brown cigars. Dave and Anatoly stepped back, grinned and eyed the table. The room promptly filled with the sounds of pouring liquids, tearing cellophane, and can openers at work. For a time, the conversation was strictly limited:

"Pretty good cheese. What do you call this?"

". . . And of course, there isn't anything in the world like American whisky. However, try some of our . . ."

". . . . Stuff really has a sting, doesn't it? But hm-m-m now suppose we mixed in a little of this . . ."

There was enough food and drink on the table to last most of the trip, but there were only two to consume it, and something in the atmosphere impeded the development of really spontaneous joy. The two men glanced around from time to time, unaware that they had the puzzled looks of couriers just home from a long trip, and still unaccustomed to the changes that happened while they were away.

"Eight-forty a pound," murmured Dave, lowering his glass.

Dovrenin put down a bottle of clear brown liquid. His expression clouded. "You should see what is happening to the ruble. And the fools at home try to pass it off as if it didn't mean anything—"

Dave shook his head. "I guess it's because we see things speeded up. They jar us more."

"Oh, of course," said Dovrenin. "But let me just show you." He got out a piece of paper, and wrote rapidly.

He slid the paper over, and Dave noted that it was headed "Overall Industrial Index." Dave read:

I	
U.S.	.98
U.S.S.R.	.86
Gr.Britain	.42
II	
U.S.	.99
U.S.S.R.	.89
Gr.Britain	.42
III	
U.S.	1.01
U.S.S.R.	.92
Gr.Britain	.47
IV	
U.S.	1.00
U.S.S.R.	.95
Gr.Britain	.55

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V	
U.S.	1.02
U.S.S.R.	.97
Gr.Britain	.69
VI	
U.S.	1.01
U.S.S.R.	.99
Gr.Britain	.91
VII	
U.S.	1.03
U.S.S.R.	1.01
Gr.Britain	1.26

Dave looked up. "This is accurate?"

"No, it's a summary of our official past estimates. Therefore, it's somewhat biased in our favor. But that can't hide the trend."

"No wonder the exchange rate's going up."

"Yes, and no wonder their ships are beating ours. But *why*?"

Dave shook his head. "All I heard of it at home was an article I read, headed, 'Boom in Free World Economy. Britain Profits from Westward Economic Shift,' whatever that means. The article didn't make sense."

Dovrenin nodded gloomily, and picked up the big glass in which Dave had mixed several drinks together. Dovrenin eyed it suspiciously, took a cautious sip, shrugged, said, "This is certainly innocuous," and drank it down like water.

Dave sat up.

Dovrenin swallowed several times, and looked around vaguely. He cleared his throat. He opened his mouth, and no sound came out. Dave glanced uneasily at the empty glass. Dovrenin tried again, and now words came out clearly, "I will show you what I mean."

Dave eased his chair back, so as to have freedom of action, just in case.

Dovrenin came to his feet, and glowered around as if looking over a large assemblage, made up entirely of his inferiors.

"Comrades," he growled, his voice threatening, "unhealthy rumors have come to my ears." He looked around, and said in a different voice, "No, we'll skip that part." He cleared his throat, glowered, and said in a deep, authoritative voice, "The present situation in steel production proves the futility of inexpert analysis. Hasty generalizations drawn from overall figures lead to fantastic conclusions. Steel production is not one monolithic development, but is the resultant of three totally unrelated factors: land-based production, sea-based production, space-based production.

"Water covers seventy-five per cent of the Earth's surface. Do you suppose there is no iron in the water, and no iron under the water? To think so would be an absurdity. But it is the kind of absurdity into which the inexpert falls, to bruise himself severely.

"Clear-headed analysis shows that in *land-based production*, we are

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breathing fire down the necks of the imperialists, and will soon *forge unshakably into the lead.* Only by desperate attempts at sea-based and space-based production are the capitalists able to stave off for a while their day of ruin. The sea- and space-based production figures are in direct proportion to their desperation at overcoming us in land-based production, and are thus a *source of grim satisfaction* to every one of us capable of a true understanding."

Dovrenin leaned across the table and said moodily to Dave, "You understand that before we came to this part, everyone had been already psychologically beaten into a jelly, so that the reasoning seemed very good."

Dave nodded sympathetically. Dovrenin picked up the empty glass and held it in the air, turning it slowly around and looking at it. "I have had it explained to me that this revolution in productive capacity is purely and simply the result of chance inventions. Little things like innovation in dynamic drift, resonant screening, ionic immobilization, linear-directed pseudo-molecular forces, stress-mold patterns, and so on. Mere inventions. No connection with the usual socio-economic factors." He gripped the glass suddenly, and Dave, expecting to see it smashed against the wall, braced himself to duck the flying fragments. Instead, Dovrenin abruptly sat down, pulled over his paper, and did some figuring on the back of it. Then he wrote on the face of the paper, and slid it across to Dave, who read:

VIII

Gr.Britain	1.83
U.S.	1.04
U.S.S.R.	1.03

"That," said Dovrenin, "is what we can expect to see very shortly."

Dave checked the figures. "Seems perfectly accurate, if the trend holds."

Dovrenin swore. "Dukes and earls all over the place! The verminous nobility are taking over the universe! What an experience for a loyal Party member."

Dave bit back the automatic comment, "Well, at least, that's better than if the Communists should take over." He observed the expression of suffering on Dovrenin's face, finished off his glass, and looked at the figures again. The room was now traveling in slow circles, so that it was with some difficulty that he worked out the next stage of the progression:

IX

Gr.Britain	2.60
U.S.	1.05
U.S.S.R.	1.05

Dovrenin checked the figures, and nodded. "That is exactly it. My friend, I am so glad you came on this ship. Otherwise, I would have been all alone with these rabid imperialists." He poured out two generous glasses of something that had a rocket on the label. After the ex-

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change of several toasts, the room picked up considerable speed.

Dovrenin held to the table with one hand, while Dave braced it from the other side, and the paper traveled back and forth. In time, Dave squinted at something reading:

XIV	
Gr.Britain	11.90
U.S.S.R.	1.15
U.S.	1.10

There was another lapse of time while Dave worked out a mixture to reverse the polarity and cut back the excessive rotational inertia the room was building up, and this somehow introduced an eccentric motion that landed them both on the floor, where they shared a fresh piece of paper bearing extended calculations on one side, and on the other an untidy scrawl reading:

Gr.Britain	3,162.4
U.S.	.1136
U.S.S.R.	1.149

"Well, well," said Dave, focusing his mind with some difficulty, "blood is thicker than water, and all that, but we can't let this happen."

Dovrenin nodded emphatically, and speaking carefully, said, "Together we will smash the filthy cap . . . er . . . imperialists."

Dave shook his head, and struggled to sit up. "Thing to do is get their secret, strain the dukes and earls out of it, and use it ourselves, see?" The beauty of this idea almost blinded him.

Dovrenin considered this, and a light seemed to burst on him, too. He beamed approval, then said, "How?"

"Have to get that first paper," said Dave. He managed to get up, and tried to step over to the table, but owing to the powerful Coriolis force operating in the room this proved to be impossible. He tried again on hands and knees, succeeded, located the paper, but found that the dizzying motion of the room impeded his concentration. He decided that something would have to be done, located a small brown bottle on the table, and after many patient tries managed to get hold of it. He unscrewed the cap and with great care swallowed the faintest taste. His nostrils immediately filled with bitter fumes, and he experienced the sensation of being slammed headlong into a brick wall.

The room had stopped spinning.

Dave set down the bottle, which was labeled "Snap-Out: The One Minute Drunk Cure. By appointment to His Majesty . . ."

"*Whew*," said Dave. He fervently hoped he hadn't taken too much. When the room began to revolve again gently, he sighed with relief, and carefully poured out a sparing dose for Dovrenin, who was lying on his back counting the revolutions of the ceiling.

Dovrenin choked, gagged, and sat up. After a moment, he sighed with relief. "That's better."

Dave, without too much diffi-

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culty from the free-wheeling action of the room, rummaged through his chest of drawers, and got out a glossy brochure. "Listen to this," he said. " 'Passengers desiring information on any subject have at their disposal a most complete reference library, which may be consulted by dialing "L" on any of the ship's viewers'."

Dovrenin looked doubtful. "Would it be that easy?"

"Maybe not, but we ought to get a few leads."

Dovrenin nodded. "Worth a try."

Both men looked not quite convinced, but as the alcohol they had absorbed overpowered the sparing dosage of Snap-Out, they appeared more confident.

Dave bent at the viewer, and dialed "L". A set of instructions jumped onto the screen, followed by a list of general topics. Dovrenin pulled up a chair and sat down nearby. Thirty minutes passed in plowing through a welter of information neither man was interested in. Then the heading "H.R.I.M. Government, Under Act of Revision, A Summary," sprang onto the screen.

Dave scanned the text, then hit the spacer button for the next page. The two men leaned forward, to read:

"Peerage. The House of Lords more drastically affected by the Revision.

"Two basic factors were taken into consideration. First was the unquestioned importance of technological innovation. One basic change of technique can revolutionize an industry. Second was the ingrained national characteristic of respect for titled nobility, a respect for rank and title apart from any immediate political power.

"At the moment of Commission's report, the foreign trade situation was extremely bad, with broadly-based competition holding an accumulating advantage in resources and production capacity. A feeling of desperation had grown up, and this may explain the speed with which the Commission's report was acted upon.

"Two measures were adopted. The principle of *decay of inherited title* provided that the eldest son of a nobleman assumed upon his father's death a rank and privilege lowered by two degrees. The son of a duke became an earl. The son of an earl became a baron. The second principle, that of *acquisition of merit*, provided that noble rank might be acquired only by merit, and *principally by the bringing to use of new technological innovations*. The patent of nobility was awarded, not to the inventor, who was seldom interested, in any case, but to the individual *who brought the useful invention to prominence*. The inventor was rewarded by prize money and a percentage of profits, but received a patent of nobility only if he himself brought the invention to prominence.

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"The result of these two measures was to create overnight an interest in inventors and inventions which had not existed for the previous two centuries. The energies of those who wished to rise socially, or who were moved to maintain their ancient rank, were at once mobilized in the search for useful innovations. Ingenious technical persons who had in vain pleaded for at least a hearing suddenly found the drawing rooms of the nation flung open to them.

"The effects were not slow in coming. A scheme for ocean-mining which had been kicked around in a desultory way for twenty years was seized upon at once and given a trial. Serious difficulties developed, but the backer was determined upon a peerage. After a heroic struggle, the process was made economically feasible. The result was a dramatic easing in the raw materials problem. New developments followed swiftly as a favorable climate was created for men of inventive minds.

"There were, of course, and still are, certain shortcomings. Fortunes have been lost on worthless devices. The wild scramble for position disgusts many. The bumptious self-importance of some newly-titled knights and baronets is a continuing offense. The lordly mannerisms of the degenerate scions of once-great families is an irritation which must be experienced to be appreciated.

"The main defense of the system is that it works. The social process it has set in motion is the unquestioned cause of the accelerating rise in Imperial power, dominion, and prosperity. This alliance of genius and worldly society is the hallmark that today distinguishes the Empire from the backward nations of the home world.

"One might wish to confer the blessings of our systems upon these nations foundering in the backwash of history. But repeated missionary efforts have failed, rousing savage passions where enlightenment was intended.

"We must not despair. The inevitable march of history will sweep the doubters along with the procession, if not at the van, yet somewhere in the dusty trail of the column, and at last all will issue out of the abyss and the confusion into the broad royal grandeur of space.

"In the end, all will be one mighty Empire."

Dave snapped off the viewer, and the two men looked at each other.

"All right," said Dovrenin. "Now we see how it works. *How do we adapt it?*"

Dinner time was approaching as, symbolic riding crop in hand, Richard, Prince of the Realm, strode briskly down the hall that ran past Room 226, where Dave and Anatoly still wrestled with their problem. From somewhere up the corridor, the stirring strains of "Rule, Brittania" came faintly

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to Richard's ears, the word "waves" replaced by "stars," destroying the rhyme but not injuring the meaning. Richard was in a good mood, and slapped his leg lightly with the riding crop every few steps, an outward sign of his satisfaction.

Word had just reached him that young Smythe had cracked the self-repair problem for gravitors in actual use. The silver-handled crop that Richard carried, modest symbol of his position as First Peer of the Empire was his for a time longer. Moreover, this discovery was bound to be so widely useful as to add another few years to his tenure as a prince of quasi-royal blood.

Even if, he thought, eyes narrowed, even if he should lose the first rank—which heaven forbid, but such things did happen—still it was no small matter to be a Prince of the Realm. Damn the accelerated decay on that rank. A fellow could never rest, without getting slammed back to a dukedom.

He rounded a corner, telling himself that it had taken three generations to work up to this position, and he didn't intend to lose it without a struggle. There were those—petty fellows, sweaty upstart barons, backslid sons of earls, and the like—who complained that a dynasty like that of his family was unfair to the others. The beautiful answer to that was, "The system exists for the benefit of the Realm and of the innovators, not for the benefit of the nobility." That left the croakers helplessly grinding their teeth. Good for them. Let them shut up and produce.

His family knew how to produce, how to keep the inventors happy and working. Hunt them out, keep them going, doubt them when doubt will stimulate, believe in them when they doubt themselves. After a time it became an instinct. He could walk past a tenement, with the smell of decaying orange peels in his nostrils, and detect an inventive mind at work in the basement across the street. There must, he supposed, be some outward sign that he wasn't consciously aware of, a flash of light and movement, a fleeting glimpse of apparatus, seen but not—

"Hullo," he said suddenly. "What's this?"

He'd come to an abrupt stop outside a blank-faced door numbered 226. There was a peculiar something in the air, like the almost palpable absence of sound a man is aware of in an intensely quiet room.

"Something doing," said Richard, his instincts alert. He glanced up and down the hall, then stepped to the door, his hand raised as if to knock, and paused, listening.

"So then," came the voice of Anatoly Dovrenin, "each Party member must sponsor one good invention every five years, or he loses his Party card. What do you think of that?"

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"It's a good idea," came the voice of Dave Blackmer, muffled by the door, "but probably it still needs to have some more work done on it. Now *my* idea is to have two major leagues of half-a-dozen teams each, see? Each region's got its own team. The New York Bombers, Boston Gnats, Philadelphia Phillies. The 'players' get on the team because they sponsor inventors. Cash prizes, pennants, and gold, silver and bronze cups are given out every six months for the leading team, with special mention and smaller cups for the leading players on each team. What scores points is useful inventions brought to prominence."

Dovrenin's voice came through the door. "This will work? Or did this idea come out of the whisky bottle? Who will be interested? Where will your 'fans' come from?"

"Where do you think? What gets people interested in a little ball batted around the park? It's the *contest* that counts. It's regional pride. Once it gets going, it picks up speed. Listen, they'll have special scouts going around to spot inventors. The newspapers will feature a running coverage—"

Outside the door, Richard frowned, gauging the potential merit of the innovations with practiced instinct. "They've got hold of something," he told himself. "Haven't got it worked into proper form yet, but—"

Habit brought his hand up, to rap once eagerly on the door.

"Just a minute," said a voice, "I'll get the door."

Horrified, Richard realized what he had been about to do.

Some inventors were best left alone, like that fellow who had the plan to turn the polar regions into tropical gardens, and which would, just incidentally, immerse London under the melted ice.

Firmly, the First Peer of the Realm stepped back, said, "Sorry, I misread the number," and strode swiftly down the hall.

The door opened, and Dave and Anatoly stared after him.

"Now," said Dave, "what do you suppose *he* wanted?"

Dovrenin shrugged. "Who knows what goes on in the minds of these grasping imperialists? Let us get back to work."

The door closed.

The ship sped on, carrying twenty-eight assorted dandies, fops, and ne'er-do-wells, thirty crewmen, four hundred and seventy-eight status-conscious noblemen, sixteen inventors and assistants in specially outfitted workshops, one proletarian, and one free-enterpriser.

Not one of these travelers was aware that, between them, they had the long-sought, supposedly-mythical entity to turn dross into wealth. But they went on using it just the same. ■

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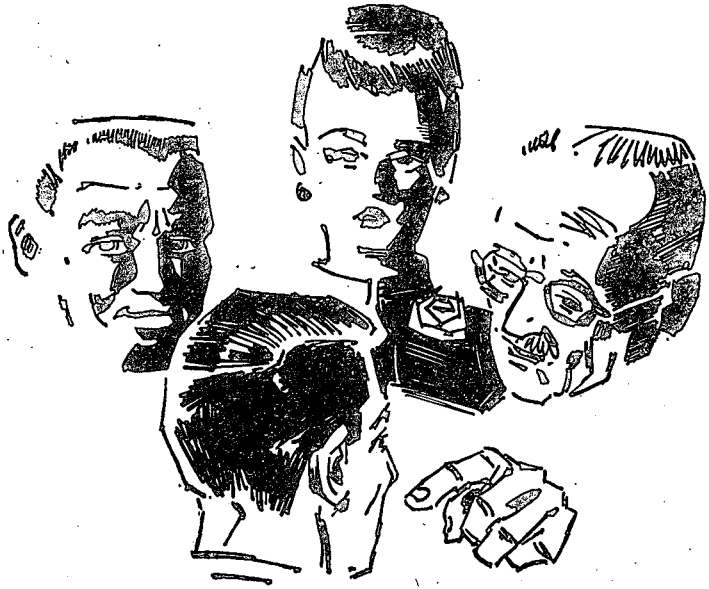
The Common Man

It would, of course, take a trio
of Ivory Tower scientists to conceive of
tracking down that statistical entity,
the Common Man, and testing out an idea on him:
And only the Ivory Tower type would predict
that egregiously wrongly!

by Guy McCord

Illustrated by Schelling



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Frederick Braun, M.D., Ph.D., various other Ds, pushed his slightly crooked hornrims back on his nose and looked up at the two-story wooden house. There was a small lawn before it, moderately cared for, and one tree. There was the usual porch furniture, and the house was going to need painting in another six months or so, but not quite yet. There was a three-year-old hover car parked at the curb of a make that anywhere else in the world but America would have been thought ostentatious in view of the seeming economic status of the householder.

Frederick Braun looked down at the paper in his hand, then up at the house again. He said to his two companions, "By Caesar, I will admit it is the most average looking dwelling I have ever seen."

Patricia O'Gara said impatiently, "Well, do we or don't we?" Her hair should have been in a pony tail, or bouncing on her shoulders, or at least in the new Etruscan revival style, not drawn back in its efficient bun.

Ross Wooley was unhappy. He scratched his fingers back through his reddish crew cut. "This is going to sound silly."

Patricia said testily, "We've been through all that, Rossie, good heavens."

"Nothing ventured, nothing . . ." Braun let the sentence dribble away as he stuffed the paper into a coat pocket, which had obviously been used as a waste receptacle for many a year, and led the way up the cement walk, his younger companions immediately behind.

He put his finger on the doorbell and cocked his head to one side. There was no sound from the depths of the house. Dr. Braun muttered, "Bell out of order."

"It would be," Ross chuckled sourly. "Remember? Average. Here, let me." He rapped briskly on the wooden door jamb. They stood for a moment then he knocked again, louder, saying almost as though hopefully, "Maybe there's nobody home."

"All right, all right, take it easy," a voice growled even as the door opened.

He was somewhere in his thirties, easygoing of face, brownish of hair, bluish of eye and moderately good looking. His posture wasn't the best and he had a slight tummy but he was a goodish masculine specimen by Mid-Western standards. He stared out at them, defensive now that it was obvious they were strangers. Were they selling something, or in what other manner were they attempting to intrude on his well being? His eyes went from the older man's thin face, to the football hero heft of the younger, then to Patricia O'Gara. His eyes went up and down her figure and became approving in spite of the straight business suit she affected.

He said, "What could I do for you?"

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"Mr. Crowley?" Ross said.

"That's right."

"I'm Ross Wooley and my friends are Patricia O'Gara and Dr. Frederick Braun. We'd like to talk to you."

"There's nobody sick here."

Patricia said impatiently, "Of course not. Dr. Braun isn't a practicing medical doctor. We are research biochemists."

"We're scientists," Ross told him, putting it on what he assumed was the man's level. "There's something on which you could help us."

Crowley took his eyes from the girl and scowled at Ross. "Me? Scientists? I'm just a country boy, I don't know anything about science." There was a grudging self-deprecation in his tone

Patricia took over, a miracle smile overwhelming her air of briskness. "We'd appreciate the opportunity to discuss it with you."

Dr. Braun added the clincher. "And it might be remunerative."

Crowley opened the door wider. "Well, just so it don't cost me nothing." He stepped back for them. "Don't mind the place. Kind of mussed up. Fact is, the wife left me about a week ago and I haven't got around to getting somebody to come in and kind of clean things up."

He wasn't exaggerating. Patricia O'Gara had no pretentions to the housewife's art herself, but she sniffed when she saw the condition of the living room. There was a dirty shirt drooped over the sofa back and beside the chair which faced the TV set were half a dozen empty beer cans. The ashtrays hadn't been emptied for at least days and the floor had obviously not been swept since the domestic tragedy which had sent Mrs. Crowley packing.

Now that the three strangers were within his castle Crowley's instincts for hospitality asserted themselves. He said, "Make yourself comfortable. Here, wait'll I get these things out of the way. Anybody like a drink? I got some beer in the box, or," he smirked at Patricia, "I got some port wine you might like, not this bellywash you buy by the gallon."

They declined the refreshments, it wasn't quite noon.

Crowley wrestled the chair which had been before the TV set around so that he could sit facing them, and then sat himself down. He didn't get this and his face showed it.

Frederick Braun came to the point. "Mr. Crowley," he said, "did it ever occur to you that somewhere amidst our nearly one hundred million American males there is the average man?"

Crowley looked at him.

Braun cleared his throat and with his thumb and forefinger pushed his glasses more firmly on the bridge of his nose. "I suppose that isn't exactly the technical way in which to put it."

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Ross Wooley shifted his football shoulders and leaned forward earnestly. "No, Doctor, that's exactly the way to put it." He said to Crowley, very seriously, "We've done this most efficiently. We've gone through absolute piles of statistics. We've . . ."

"Done what?" Crowley all but wailed. "Take it easy, will you? What are you all talking about?"

Patricia said impatiently, "Mr. Crowley, you are the average American. The man on the street. The Common Man."

He frowned at her. "What'd'ya mean, common? I'm as good as anybody else."

"That's exactly what we mean," Ross said placatingly. "You are exactly as good as anybody else, Mr. Crowley. You're the average man."

"I don't know what the devil you're talking about. Pardon my language, Miss."

"Not at all," Patricia sighed. "Dr. Braun, why don't you take over? We seem to all be speaking at once."

The little doctor began to enumerate on his fingers. "The center of population has shifted to this vicinity, so the average American lives here in the Middle West. Population is also shifting from rural to urban, so the average man lives in a city of approximately this size. Determining average age, height, weight is simple with government data as complete as they are. Also racial background. You, Mr. Crowley, are predominately English, German and Irish, but have traces of two or three other nationalities."

Crowley was staring at him. "How in the devil did you know that?"

Ross said wearily, "We've gone to a lot of trouble."

Dr. Braun hustled on. "You've had the average amount of education, didn't quite finish high school. You make average wages working in a factory as a clerk. You spent some time in the army but never saw combat. You drink moderately, are married and have one child, which is average for your age. Your I.Q. is exactly average and you vote Democrat except occasionally when you switch over to Republican."

"Now wait a minute," Crowley protested. "You mean I'm the only man in this whole country that's like me? I mean, you mean I'm the average guy, right in the middle?"

Patricia O'Gara said impatiently. "You are the nearest thing to it, Mr. Crowley. Actually, possibly one of a hundred persons would have served our purpose."

"O.K.," Crowley interrupted, holding up a hand. "That gets us to the point. What's this here purpose? What's the big idea prying, like, into my affairs till you learned all this about me? And what's this stuff about me getting something out of it? Right now I'm between jobs."

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The doctor pushed his battered hornrims back on his nose with his forefinger. "Yes, of course," he said reasonably. "Now we get to the point. Mr. Crowley, how would you like to be invisible?"

The three of them looked at him. It seemed to be his turn.

Crowley got up and walked into the kitchen. He came back in a moment with an opened can of beer from which he was gulping even as he walked. He took the can away from his mouth and said carefully, "You mean like a ghost?"

"No, of course not," Braun said in irritation. "By Caesar, man, have you no imagination? Can't you see it was only a matter of time before someone, possibly working away on an entirely different subject of research, stumbled upon a practical method of achieving invisibility?"

"Now, wait a minute," Crowley said, his voice belligerent. "I'm only a country boy, maybe, without any egghead background, but I'm just as good as the next man and just as smart. I don't think I like your altitude."

"Attitude," Ross Wooley muttered unhappily. He shot a glance at Patricia O'Gara but she ignored him.

Patricia turned on the charm. Her face opened into smile and she said soothingly, "Don't misunderstand, Mr. Crowley. May I call you Don? I'm sure we're going to be associates. You see, Don, we need your assistance."

This was more like it. Crowley sat down again and finished the can of beer. "O.K., it won't hurt to listen. What's the pitch?"

The older man cleared his throat. "We'll cover it quickly so that we can get to the immediate practical aspects. Are you interested in biodynamics . . . umah . . . no, of course not. Let me see. Are you at all familiar with the laws pertaining to refraction of . . . umah, no." He cleared his throat again, unhappily. "Have you ever seen a medusa, Mr. Crowley? The gelatinous umbrella-shaped free swimming form of marine invertebrate related to the coral polyp and the sea anemone?"

Ross Wooley scratched his crew cut and grimaced. "Jellyfish, Doctor, jellyfish. But I think the Portuguese Man-of-War might be a better example."

"Oh, jellyfish," Crowley said. "Sure, I've seen jellyfish. I got an aunt lives near Baltimore. We used to go down there and swim in Chesapeake Bay. Sting the devil out of you. What about it?"

Patricia leaned forward, still smiling graciously. "I really don't see a great deal of point going into theory, gentlemen." She looked at Ross and Dr. Braun, then back at Crowley. "Don, I think that what the doctor was leading up to was an attempt to describe in layman's language the theory of the process onto which we've stumbled. He was using the jellyfish as an example of a life form all but invisible.

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But I'm sure you aren't interested in technical terminology, are you? A good deal of gobbledygook, really, don't you think?"

"Yeah, that's what I say. Let's get to the point. You mean you think it's possible to make a guy invisible. Nobody could see him, eh?"

"It's not a matter of thinking," Ross said sourly. "We've done it."

Crowley stared at him. "Done it? You mean, you, personal? You got invisible?"

"Yes. All three of us. Once each."

"And you come back all right, eh? So anybody can see you again."

The doctor said reasonably, "Here we are, quite visible. The effect of the usual dosage lasts for approximately twelve hours."

They let him assimilate it for a few minutes. Some of the ramifications were coming home to him. Finally he got up and went into the back again for another can of beer. By this time Ross Wooley was wishing he would renew his offer, but the other had forgotten his duties as a host.

He took the can away from his mouth and said, "You want to make me invisible. You want me to, like, kind of experiment on." His eyes thinned. "Why pick me?"

The doctor said carefully, "Because you're the common man, the average man, Mr. Crowley. Before we release this development, we would like to have some idea of the scope of the effects."

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The beer went down chuck-a-luck. Crowley put the can aside and licked his bottom lip, then rubbed it with a fingertip. He said slowly, "Now take it easy while I think about this." He blinked. "Why you could just walk into a bank and . . ."

The three were watching him, empty faced.

"Exactly," Dr. Braun said.

Frederick Braun stared gloomily from the hotel suite's window at the street below. He peered absently at his thin wrist, looked blank for a moment, then realized all over again that his watch was being cleaned. He stared down at the street once more, his wrinkled face unhappy.

The door opened behind him and Patricia O'Gara came in briskly and said, "No sign of the guinea pig yet, eh?"

"No."

"Where's Rossie?"

The doctor cleared his throat. "There was an item on the newscast. A humor bit. It seems that the head waiter of the Gourmet . . . Have you ever eaten at the Gourmet, Patricia?"

"Do I look like a millionaire?"

"At any rate, a half pound of the best Caspian caviar disappeared, spoonful at a time, right before his eyes."

Patricia looked at him. "Good heavens."

"Yes. Well, Ross has gone to pay the tab."

Patricia looked at her watch. "The effects will be wearing off shortly. Crowley will probably be back at any time. We warned him about returning to visibility in the middle of some street, completely nude." She sank into a seat and looked up at the doctor. "I suppose you admit I was right." Her voice was crisp.

The other turned on her. "And just why do you say that?"

"This caviar bit. Our friend, Donald Crowley, has obviously walked into the Gourmet restaurant, having heard it was the most expensive in New York, and ate as much as he could stuff down of the most expensive item on the menu."

The elderly little doctor pushed his battered hornrims farther back on his nose. "Tell me, Patricia, when you made the experiment, did you do anything . . . umah . . . anything at all, that saved you some money?"

Uncharacteristically, she suddenly giggled. "I had the time of my life riding on a bus without paying the fare."

Braun snorted. "Then Donald Crowley, in eating his caviar, did substantially the same thing. It's probably been a life's ambition of his to eat in an ultra-swank restaurant and then walk out without paying. To be frank," the doctor cleared his throat apologetically, "it's always been one of mine."

Patricia conceded him a chuckle, but then said impatiently, "It's

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one thing my saving fifteen cents on a bus ride, and his eating twenty-five dollars worth of caviar."

"Merely a matter of degree, my dear."

Patricia said in irritation, "Why in the world did we have to bring him to New York where he could pull such childish tricks? We could have performed the experiment right there in Far Cry, Nebraska."

Dr. Braun abruptly ceased the pacing he had begun and found a chair. He absently stuck a hand into a coat pocket, pulled out a crumbled piece of paper, stared at it for a moment, as though he had never seen it before, grunted, and returned it to the pocket. He looked at Patricia O'Gara. "We felt that on completely unknown territory he would feel less constrained, don't you remember? In his home town, his conscience would be more apt to restrict him."

Something suddenly came to her. She looked at her older companion suspiciously. "That newscast. Was there anything else on it? Don't look innocent, you know what I mean."

"Well, there was one item."

"Out with it," she demanded.

"The Hotel Belefonte threatens to sue that French movie star, Brigette whatever-her-name is."

"Brigette Loren," Patricia said, staring. "What's that got to do with Donald Crowley?"

The good doctor was embarrassed. "It seems that she came running out of her suite, umah, semi-dressed and screaming that the hotel was haunted."

"Good heavens," Patricia said with sudden vision. "That's one aspect I hadn't thought of."

"Evidently Crowley did."

Patricia O'Gara said definitely, "My point's been proven. Our average man is a slob. Give him the opportunity to exercise unlimited freedom without danger of consequence and he becomes an undisciplined and dangerous lout."

Ross Wooley had come in, scowling, just in time to catch most of that. He tossed his hat onto a table and fished in his pockets for pipe and tobacco. "Nuts, Pat," he said. "In fact, just the opposite's been proven. Don's just on a fun binge. Like a kid in a candy shop. He hasn't done anything serious. Went into a fancy restaurant and ate some expensive food. Sneaked into the hotel room of the world's most famous sex-symbol and got a close-up look." He grinned suddenly. "I wish I had thought of that."

"Ha!" Patricia snorted. "Our engagement is off, you Peeping Tom."

"Children, children," Braun chuckled. "I'll admit, though, I think Ross is correct. Don's done little we three didn't when first given the robe of invisibility. We experimented, largely playfully, even childishly."

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Patricia bit out, "This experiment is ridiculous, anyway, and I don't know why I ever agreed to it. Scientific? Nonsense. Where are our controls? For it to make any sense we'd have to work with scores of subjects. Suppose we do agree that the manner in which Don Crowley has reacted is quite harmless. Does that mean we can release this discovery to the world? Certainly not."

Ross said sullenly, "But you agreed that we'd go by the results of this . . ."

"I agreed to no such thing, Rossie Wooley, you overgrown lug. All I agreed to do was consider the results. I was, and am, of the opinion that if the person our politicians so lovingly call the Common Man was released of the restrictions inhibiting him, he'd go hog wild and destroy both society and himself. What is to prevent murder, robbery, rape and a score of other crimes, given invisibility for anyone who has a couple of dollars with which to go into a drugstore and purchase our serum?"

Her fiancé sighed deeply, jamming tobacco fiercely into the bowl of his briar. He growled, "Look, you seem to think that the only thing that restricts man is the fear of being punished. There are other things, you know."

"Good heavens," she said sarcastically. "Name *one*."

"There is the ethical code in which he was raised, based on religion or otherwise. There is the fact that man is fundamentally good, to use a trite term, given the opportunity."

"My education has evidently been neglected," Patricia said, still argumentatively. "I've never seen evidence to support your claim."

"I'm not saying individuals don't react negatively, given opportunity to be antisocial," he all but snarled. "I'm just saying people in general, common, little people, trend toward decency, desire the right thing."

"Individuals my . . . my neck," Patricia snapped back. "Did you ever hear of Rome and the games? Here a whole people, millions of them, were given the opportunity to indulge in sadistic spectacles to their heart's desire. How many of them stayed home from the games?" She laughed in ridicule.

Ross flushed. "Some of them did, confound it."

Dr. Braun had been taking in their debate, uncomfortably. As though in spite of himself, he said now, "Very few, I am afraid."

"Religious ethic," Patricia pursued, relentlessly. "The greatest of the commandments is Thou Shalt Not Kill, but comes along a war in which killing becomes not only permissible but an absolute virtue and all our good Christians, Jews, Mohammedans and even Buddhists, who supposedly are not even allowed to kill mosquitoes, wade in with sheer happiness."

"War releases abnormal passions," Ross said grudgingly.

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"You don't need a war. Look at the Germans, supposedly one of our most highly civilized people. When the Nazi government released all restraints on persecution of the Jews, gypsies and others, you know what happened. This began in peace time, not in war."

Dr. Braun shifted in his chair. He said, his voice low, "We needn't look beyond our own borders. The manner in which our people conducted themselves against the Amerinds from the very beginning of the white occupation of North America was quite shocking."

Ross said to him, "I thought you were on my side. The Indian wars were a long time ago. We're more advanced now."

Dr. Braun said softly, "My father fought against Geronimo in Arizona. It wasn't so long ago as all that."

Ross Wooley felt the argument going against him and lashed back. "We've been over and over this, what's your point?"

Patricia said doggedly, "The same point I tried to make from the beginning. This discovery must not be generally released. We'll simply have to suppress it."

The door opened behind them. They turned. Nothing was there. Ross, scowling, lumbered to his feet to walk over and close it.

"Hey, take it easy," a voice laughed. "Don't walk right into a guy."

Ross stopped, startled.

Dr. Braun and Patricia stood up and stared, too.

Crowley laughed. "You all look like you're seeing a ghost."

Ross rumbled a grudging chuckle. "It'd be all right if we *saw* the ghost, it's not seeing you that's disconcerting."

The air began to shimmer, somewhat like heat on the desert's face.

Crowley said, "Hey, the stuff's wearing off. Where're my clothes?"

"Where you left them. There in that bedroom," Ross said. "We'll wait for you." He went back and rejoined his associates. The door to the bedroom opened, there was a shimmering, more obvious now, and then the door closed behind it.

"He rejoined us just in time," Dr. Braun murmured. "Another ten minutes and he would have . . . umah . . . *materialized* down on the street."

Ross hadn't finished the discussion. He said, his face in all but pout, "What you don't realize, Pat, is the world has gone beyond the point where scientific discoveries can be suppressed. If we try to keep the lid on this today, the Russians or Chinese, or somebody, will hit on it tomorrow."

Patricia said impatiently, "Good heavens, let's don't ring the Cold War into it."

Ross opened his mouth to snap something back at her, closed it again and shrugged his bulky shoulders angrily.

In a matter of less than ten

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minutes the bedroom door reopened and this time a grinning Crowley emerged, fully dressed. He said, "Man, that was a devil of an experience!"

They saw him to a chair and had him talk it all through. He was candid enough, bubbling over with it all.

In the some eleven and a half hours he'd been on his own, he had covered quite an area of Manhattan.

Evidently the first hour had been spent in becoming used to the startling situation. He couldn't even see himself, which, to his surprise affected walking and even use of his hands. You had to get used to it. Then there was the fact that he was nude and *felt* nude and hence uncomfortable walking about in mixed pedestrian traffic. But that phase passed. Early in the game he found that there was small percentage in getting into crowds. It led to all sorts of complications, including the starting of minor rows, one person thinking another was pushing when it was simply a matter of Crowley trying to get out from underfoot.

Then he went through a period of the wonder of it all. Being able to walk *anywhere* and observe people who had no suspicion that they were being observed. It was during that phase that he had sought out the hotel in which he had read the chesty French movie actress Brigette Loren was in residence. Evidently, he'd hit the nail right on the head. Brigette was at her toilette when he arrived on scene In telling about this, Crowley leered amusedly at Patricia from the side of his eyes. She ignored him.

Then he'd gone through a period when the full realization of his immunity had hit him.

At this point he turned to Braun, "Hey, Doc, you ever eaten any caviar? You know, that Russian stuff. Supposed to be the most expensive food in the world."

The doctor cleared his throat. "Small amounts in hors d'oeuvres at cocktail parties."

"Well, maybe I'm just a country boy but the stuff tastes like fish eggs to me. Anyway, to get back to the story . . ."

He'd gone into Tiffany's and into some of the other swank shops. And then into a bank or two, and stared at the treasures of Manhattan.

At this point he looked at Ross. "You know, just being invisible don't mean all that. How you going to pick up a wad of thousand dollar bills and just walk out the front door with them? Everybody'd see the dough just kind of floating through the air."

"I came to the same conclusion myself, when I experimented," Ross said wryly.

He had ridden on the subways . . . free. He had eaten various food in various swank restaurants. He had even had drinks in name bars, sampling everything from

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Metaxa to vintage champagne. He was of the opinion that even though he remained invisible for the rest of his years, he'd still stick to bourbon and beer.

He had gone down to Wall Street and into the offices of the top brokerage firms and into the sanctum sanctorums of the wealthiest of mucky-mucks but had been too impatient to stick around long enough to possibly hear something that might be profitable. He admitted, grudgingly, that he wouldn't have known what to listen for anyway. Frustrated there, he had gone back uptown and finally located the hangout of one of the more renown sports promoters who was rumored to have gangster connections and was currently under bail due to a boxing scandal. He had stayed about that worthy's office for an hour, gleaning nothing more than several dirty jokes he'd never heard before.

All this activity had wearied him so he went to the Waldorf, located an empty suite in the tower and climbed into bed for a nap after

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coolly phoning room service to give him a call in two hours. That had almost led to disaster. Evidently, someone on room service had found the suite to be supposedly empty and had sent a boy up to investigate. However, when he had heard the door open, Crowley had merely rolled out of the bed and left, leaving a startled bellhop behind staring at rumpled bedclothes which had seemed to stir of their own accord.

The rest of the day was little different from the first hours. He had gone about gawking in places he couldn't have had he been visible. Into the dressing room of the Roxie, into the bars of swank private clubs, into the offices of the F.B.I. He would have liked to have walked in on a poker game with some real high rollers playing, such as Nick the Greek, but he didn't have the time nor know-how to go about finding one.

Crowley wound it all up with a gesture of both hands, palms upward. "I gotta admit, it was fun, but what the devil good is it?"

They looked at him questioningly.

Crowley said, "I mean, how's it practical? How can you make a buck out of it, if you turn it over to the public, like? Everybody'd go around robbing everybody else and you'd all wind up equal."

Dr. Braun chuckled in deprecation. "There would be various profitable uses, Don. One priceless one would be scientific observation of wild life. For that matter there would be valid usage in everyday life. There are often personal reasons for not wishing to be observed. Celebrities, for instance, wishing to avoid crowds."

"Yeah," Crowley laughed, "or a businessman out with his secretary."

Dr. Braun frowned. "Of course, there are many other aspects. It would mean the end of such things as the Iron Curtain. And also the end of such things as American immigration control. There are many, many ramifications, Don, some of which frighten us. The world would be never quite the same."

Crowley leaned forward confidentially. "Well, I'll tell you. I was thinking it all out. What we got to do is turn it over to the Army and soak them plenty for it."

The others ignored his cutting himself a piece of the cake.

Ross Wooley merely grunted bitterly.

Patricia said impatiently, "We've thought most of these things through, Don. However, Dr. Braun happens to be quite a follower of Lord Russell."

Crowley looked at her blankly.

"He's a pacifist," she explained.

Braun pushed his glasses back more firmly on his nose and said, gently, "The military already have enough gadgets to destroy quite literally everything and I trust one set of them no more than the other.

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If *both* sides had our discovery, then, very well, each would go about attempting to find some manner of penetrating the invisibility, or taking various measures to protect their top secrets. But to give it to just one would be such an advantage that the other would have to embark immediately upon a desperate attack before the advantage could be fully realized. If we turn this over to the Pentagon, for exclusive use, the Soviets would have to begin a preventative war as soon as they learned of its existence."

"You a red?" Crowley said, scowling.

The doctor shrugged hopelessly. "No," he said.

Crowley turned to the other two. "If you think it's the patriotic thing to do, why don't one of you sell it to the government?"

Patricia said testily, "You don't understand, Don. Even if we were so thoroughly in disagreement that we would act unilaterally, we couldn't. You see, this is a three-way discovery. No one of us knows the complete process."

His face twisted. "Look, maybe some of this egghead stuff doesn't get through to me but I'm not stupid, see? You got the stuff, haven't you? You gave me that shot this morning."

Braun took over, saying reasonably, "Don, this discovery was hit upon by accident. The three of us are employed in the laboratories of a medical research organization. I am the department head. Patricia and Ross were doing some routine work on a minor problem when they separately stumbled upon some rather startling effects, practically at the same time. Each, separately, brought their discoveries to me, and, working you might say intuitively, I added some conclusions of my own, and . . . well, I repeat, the discovery was stumbled upon."

Crowley assimilated that. "None of you knows how to do it, make those injections like, by himself?"

"That is correct. Each knows just one phase of the process. Each must combine with the other two."

Patricia said impatiently, "And thus far we wish to keep it that way. Rossie believes the discovery should be simultaneously revealed on a world-wide basis, and let man adapt to it as best he can. I think it should be suppressed until man has grown up a little—if he ever does. The doctor vacillates between the two positions. What he would truly like to see, is the method kept only for the use of qualified scientists, but even our good doctor realizes what a dream that is."

Crowley took them all in, one at a time. "Well, what the devil are you going to do?"

"That's a good question," Ross said unhappily.

"This experiment was a farce," Patricia said irritably. "After all our trouble locating Don, our *Common Man*, we have found out nothing that we didn't know be-

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fore. His reactions were evidently largely similar to our own and . . ." She broke it off and frowned thoughtfully. The other three looked at her questioningly.

Patricia said, "You know, we simply haven't seen this thing through as yet."

"What do you mean, Pat?" Ross growled.

She turned to him. "We haven't given Don the chance to prove which one of us is right. One day is insufficient. Half the things he wished to do, such as sneaking around picking up stock tips in Wall Street and inside information on sporting events . . ."

"Hey, take it easy," Crowley protested. "I was just, like, curious."

Ross said heatedly, "That's not fair. I'll admit, I, too, thought of exactly the same possibilities. But *thinking* about them and going through with them are different things. Haven't you ever thought about what you'd do if given the chance to be world-wide supreme dictator? But, truly, if the job was offered, would you take it?"

"Good heavens," Patricia said disgustedly, "remind me to break off our engagement if I haven't already done it. I hate overpowering men. All I'm saying is that we'll have to give Don at least a week. One day isn't enough."

Dr. Braun cocked his head to one side and said uncomfortably, "I'm not sure but that in a week's time our friend Don might be able . . . See here, Don, do you mind going on down to the hotel's bar while we three talk this through?"

Crowley obviously took umbrage at that, but there was nothing to be done. Frowning peevishly, he left.

The doctor looked from one to the other of his associates. "By Caesar, do you realize the damage friend Don could accomplish in a week's time?"

Patricia laughed at him. "That's what I keep telling the two of you. Do you realize the damage *any* person could do with invisibility? Not to speak of giving it to every Tom, Dick and Harry in the world."

Ross said, "We've started this, lets go through with it. I back Pat's suggestion, that we give Don sufficient serum to give him twelve hours of invisibility a day for a full week. However, we will ration it out to him day by day, so that if things get out of hand we can cut his supply.

"That's an idea," Patricia said. "And I suspect that within half the period we'll all be convinced that the process will have to be suppressed."

Ross leaned forward. "Good. I suggest we three keep this suite and get Don a room elsewhere, so he won't be inhibited by our continual presence. Once a day we'll give him enough serum for one shot and he can take it any time he wishes to." He ran his beefy hand back through his red crew cut in a gesture of satisfaction. "If he seems to get out of hand, we'll call it all off."

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Dr. Braun cleared his throat unhappily. "I have premonitions of disaster, but I suppose if we've come this far we should see the experiment through."

Patricia said ungraciously, "At least the lout will be limited in his accomplishments by his lack of imagination. Imagine going into that French girl's dressing room."

"Yeah," Ross said ludicrously trying to make his big open face look dreamy.

"You wretch," Patricia laughed. "The wedding is off!"

But Crowley was no lout. He was full of the folk wisdom of his people.

God helps those who help themselves.

It's each man for himself and the devil take the hindmost.

Not to speak of.

Never give a sucker an even break.

If I didn't do it, somebody else would.

Had he been somewhat more of a student he might also have run into that nugget of the ancient Greek. *Morals are the invention of the weak to protect themselves from the strong.*

Once convinced that the three eggheads were incapable of realizing the potentialities of their discovery, he had little difficulty in arguing himself into the stand that he should. It helped considerably to realize that in all the world only four persons, including himself, were aware of the existence of the invisibility serum.

He spent the first day in what Marx called in "Das Kapital" the "original accumulation of capital," although it would seem unlikely that even in the wildest accusations of the most confirmed Marxist, no great fortune was ever before begun in such wise.

It was not necessary, he found, to walk into a large bank and simply seemingly levitate the money out the front door. In fact, that would have meant disaster. However, large sums of money are to be found elsewhere on Manhattan and for eleven hours Crowley used his native ingenuity and American know-how, most of which had been gleaned from watching TV crime shows. By the end of the day he had managed to accumulate in the neighborhood of a hundred thousand dollars and was reasonably sure that the news would not get back to his sponsors. The fact was, he had cleaned out the treasuries of several numbers rackets and those of two bookies.

It was important, he well realized, that he be well under way before the three eggheads decided to lower the boom.

The second day he spent making his preliminary contacts, an operation that was helped by his activities of the day before. He was beginning already to get the feel of the underworld element with which he had decided he was going to have to work, at least in the early stages of his operations.

Any leader, be he military, politi-

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cal or financial, knows that true greatness lies in the ability to choose assistants. Be you a Napoleon with his marshals, a Roosevelt with his brain trust, a J. P. Morgan with his partners, the truism applies. No great leader has ever stood alone.

But Crowley also knew instinctively that he was going to have to keep the number of his immediate associates small. They were going to have to know his secret, and no man is so naïve as not to realize that while one person can keep a secret, it becomes twice as hard for two and from that point on the likelihood fades in a geometric progression.

On the fifth day he knocked on the door of the suite occupied by Dr. Braun and his younger associates and pushed his way in without waiting for response.

The three were sitting around awaiting his appearance and to issue him his usual day's supply of serum. They greeted him variously, Patricia with her usual brisk, almost condescending smile; Dr. Braun with a gentle nod and a speaking of his first name; Ross Wooley sourly. Ross obviously had some misgivings, the exact nature of which he couldn't quite put his finger upon.

Crowley grinned and said, "Hello, everybody."

"Sit down, Don," Braun said gently. "We have been discussing your experiment."

While the newcomer was finding his seat, Patricia said testily, "Actually, we are not quite happy about your reports, Don. We feel an . . . if you'll pardon us . . . an evasive quality about them. As though you aren't completely frank."

"In short," Ross snapped, "have you been pulling things you haven't told us about?"

Crowley grinned at them. "Now you folks are downright suspicious."

Dr. Braun indicated some notes on the coffee table before him. "It seems hardly possible that your activities would be confined largely to going to the cinema, to the swankier night clubs and eating in the more famed restaurants."

Crowley's grin turned into a half embarrassed smirk. Patricia thought of a small boy who had been caught in a mischief but was still somewhat proud of himself. He said, "Well, I gotta admit that there's been a few things. Come on over to my place and I'll show you." He looked at Braun. "Hey, Doc, about how much is one of them Rembrandt paintings worth?"

Braun rolled his eyes toward the ceiling, "Great Caesar," he murmured. He came to his feet and looked around at the rest of them. "Let us go over there and learn the worst," he said.

At the curb, before the hotel, Ross Wooley looked up and down the street for a cab.

Crowley said, his voice registering self-deprecation, "Over here."

Over here was a several toned,

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fantastically huge hover-limousine, a nattily dressed, sharp looking, expressionless faced young man behind the wheel.

The three looked at Crowley.

He opened the door. "Climb in folks. Nothing too good for you scientists, eh?"

Inside, sitting next to a window with Patricia beside him and Dr. Braun at the far window, and with Ross in a jump seat, Crowley said expansively, "This is Larry. Larry, this is Doc Braun and his friends I was telling you about, Ross Wooley and Pat O'Gara. They're like scientists."

Larry said, "Hi," without inflection, and tooled the heavy car out into the traffic.

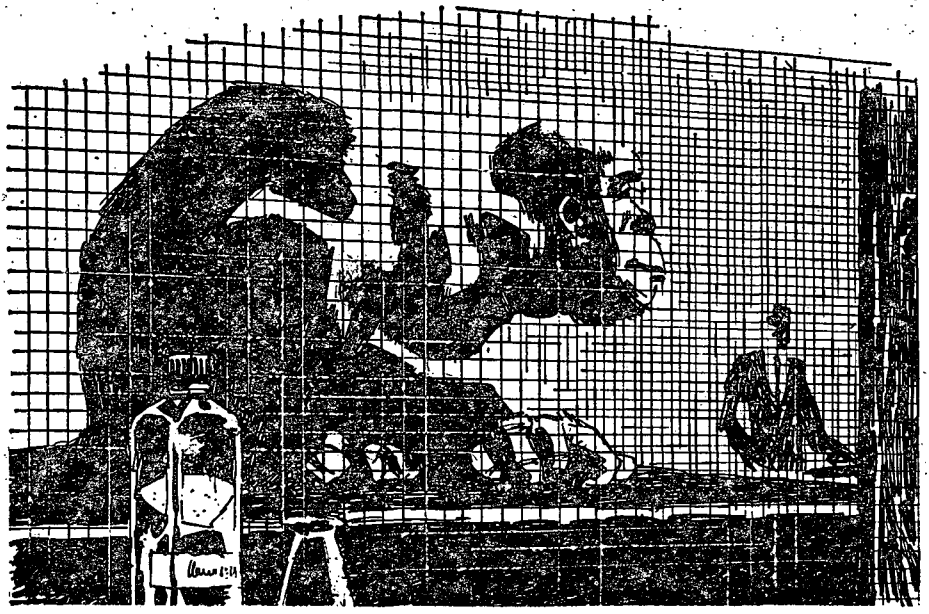
Ross spun on Crowley. "Don, where'd you get this car?"

Crowley laughed. "You'll see. Take it easy. You'll see a lot of things."

They were too caught up in their own thoughts and in the barrage of demands they were leveling at Crowley to notice direction. It wasn't until they were already on the George Washington Bridge that Patricia blurted, "Don, this isn't the way to your hotel!"

Crowley said tolerantly, "Take it easy, Pat. We're taking a short detour. Something I have to show you in Jersey."

"I don't like this," Ross snapped. The redhead shifted his heavy



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shoulders in a reflexive protest against the confining tweed coat he wore.

"Relax," Crowley told him reasonably. "I've been thinking things out quite a bit and I've got a lot to discuss with you folks."

They were across the bridge now and Larry headed into the maze which finally unraveled itself to the point that it was obvious they were heading north. Larry hit the lift lever and they rose ten feet from the surface.

Dr. Braun said evenly, "You had no intention of taking us to your room. You used that as a ruse to get us out of our hotel and, further, across the bridge until we are now in a position where it's quite impossible for us to summon police assistance."

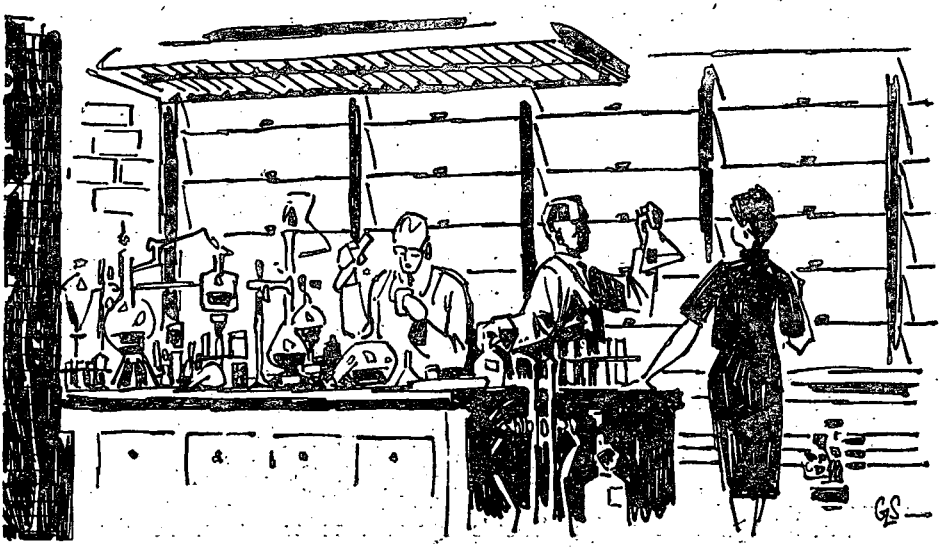
Crowley grinned. "That's right, Doc. Didn't I tell you these three were real eggheads, Larry? Look how quick he figured that out."

Larry grunted in what might have been amusement.

Ross, growling low in his throat, turned suddenly in his jump seat and grabbed Crowley by the coat front. "What's going on here?"

Crowley snapped, "Larry!"

From seemingly nowhere, the chauffeur had produced a thin black automatic and was now lazily pointing it, not so much at Ross Wooley as at Dr. Braun and Patricia. He said evenly, softly, "Easy, friend."



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Ross released his grip, "Put that thing away," he blurted.

"Sure, sure," Larry said, his voice all but disinterested. The gun disappeared.

Crowley, only slightly ruffled, said now, "Take it easy, Ross. Nothing's going to happen to you. I'm going to need you folks and I'm going to treat you right."

"Where are we going?" Ross growled.

"I had the boys rent me a big estate like up in the Catskills. Big place, nice and quiet. In fact, the last tenants used it for one of these rest sanitariums. You know, rich people with DTs or trying to get a monkey off their back."

"The boys?" Patricia said softly.

He looked at her and grinned again. Crowley was obviously enjoying himself. "I got a few people working for me," he explained.

Dr. Braun blurted, "You fool! You mean you've revealed the existence of the process Pat, Ross and I worked out to a group of ignoramuses?"

Crowley said angrily, "Now look, Doc, let's don't get on that bit. Maybe I'm just a country boy but I'm as smart as the next man. Just because some of you eggheads spend half your life in college don't mean you've got any monopoly on good common sense. I went to the school of hard knocks, understand, and I got plenty of diplomas to prove it. Take it easy on that ignoramus talk."

Patricia said suddenly, "Don's right, Dr. Braun. I think you've badly underestimated him."

Ross snorted sourly at that remark. "We've all underestimated him. Well, I think you'll agree that our friend Don will get no more injections of the invisibility serum."

Crowley chuckled.

They looked at him. Three sinkings of stomach taking place simultaneously.

"Now, you know I thought that might be your altitude . . ."

"Attitude," Ross muttered.

". . . So I went to the trouble of coming up to your suite last night and sort of confiscating the supply. By the looks of it, I'd say there was enough for another ten shots or so."

"See," Patricia said to Ross. "You're not as smart as you thought you were. Don's one up on you."

The estate which the "boys" had secured for Crowley was two or three miles out of Tannersville on a mountainside and quite remote. He took considerable pride in showing them about, although it was obvious that he had been here before only once himself.

He was obviously enjoying the situation thoroughly and had planned it out in some detail. Besides the empty-faced Larry, who had driven the car, they were introduced to two more of Crowley's confederates, neither of whom gave any indication that the three were present under duress. The first was

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a heavy-set, moist palmed southerner with a false air of the jovial. He shook hands heartily, said nothing with a good many words for a few minutes and then excused himself. The third confidant was an older man of sad mien who would have passed easily in the swankest of Washington, New York or London private clubs. He was introduced simply as Mr. Whitely, greeted them pleasantly as though all were fellow guests, had a word to say about the weather then and passed on.

Patricia was frowning. "Your southern friend, Paul Teeter, it seems to me I've heard his name before.

Crowley grinned. "Oh, Paul's been in the news from time to time."

Ross was looking after Mr. Whitely who had disappeared into the main building. They were standing on the lawn, as part of the guided tour Crowley was giving them. He growled, "I suppose the two of them are experienced confidence men, or something."

"Take it easy with those cracks, Ross," Crowley said. "Whitely used to have a seat on the Stock Exchange. A real big shot. But that was before they disbarred him, or whatever they call it."

"See here," Dr. Braun said urgently. "We've had enough of all this, Don. I propose we go somewhere where it will be possible for us to bring you to your senses, and save you from disaster."

"Kind of a powwow, eh? O.K., Doc, come on in here." He led them to the entrance, conducted them inside and into a library that led off the main *entrada*. He said, "By the way, Larry has a few of his boys up here just kind of like estate watchmen. Some of them aren't much used to being out of the city and they get nervous. So . . ."

Ross growled, "All right, all right, don't try to make like a third-rate villain in a B-Movie. You have guards about and it would be dangerous to try to leave without your permission."

"How about that?" Crowley exclaimed as though amazed. "Man, you eggheads catch on quick. Nothing like a college education." He waved them to chairs. "I'm going to have to leave for a while. Whitely's got some big deal brewing and we got to work it out." He grinned suddenly. "And Larry's got a different kind of deal. One he's been planning for years but hasn't been able to swing one or two details. It's a caution how many details a little man who wasn't there can handle in one of these king-size capers."

He had used the pseudo-criminal term, caper, with considerable satisfaction. Crowley was obviously having the time of his life.

"Very well," Braun said, "we'll wait." When the other had left the room, leaving the door open behind him, the doctor turned to his two younger associates. "What children we've been."

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Ross Wooley growled unhappily, "Brother, we couldn't have picked a worse so-called Common Man, if we'd tried. That character is as nutty as a stuffed date. Do you realize what he's in a position to do?"

Patricia twisted her mouth thoughtfully. "I wonder if any of us really realize. I am afraid even with all our speculation, we never truly thought this out."

Dr. Braun pushed his glasses back on his nose with a forefinger: He shook his head. "You make a mistake, Ross. We didn't make a bad choice in our selection of Don Crowley for our typical Common Man."

Ross looked at him and snorted.

Braun said doggedly, "Remember, we attempted to find the average man, the common man, the little man, the man in the street. Well, it becomes obvious to me that we did just that."

Patricia said thoughtfully, "I don't know. I'm inclined to think that from the beginning you two have underestimated Don. He has certainly shown considerable ingenuity. Do you realize that he's done all this in a matter of less than a week?"

"Done all *what?*" Ross said sarcastically.

She gestured. "Look at this establishment. He's obviously acquired considerable money, and he already has an organization, or at least the beginnings of one."

"That is beside the point," Braun said ruefully. "I say that he is reacting as would be expected. As the average man in the street would react given the opportunity to seize almost unlimited power, and with small chance of reprisal."

Patricia shrugged as though in disagreement.

Braun looked at Ross Wooley. "Close the door, Ross. Lord knows when we'll have another chance to confer. Obviously, something must be done."

Ross came quickly to his feet, crossed to the door, looked up and down the hallway which was empty and then closed the door behind him. He came back to the others and drew his chair in closer so that they could communicate in low voices.

Braun said, "One thing is definite. We must not allow him to secure further serum. For all we know, he might be planning to inject some of those gangsters he's affiliated himself with."

Patricia shook her head thoughtfully. "I still think you underestimate Don. He must realize he can't trust them. At this stage, he has had to confide in at least two or three, fully to utilize his invisibility. But in the long run it isn't to his advantage to have *anybody* know about it. If the authorities, such as the F.B.I., began looking for an invisible man, sooner or later they would penetrate the field of invisibility."

"You mean you think Crowley will use these men for a time and then . . . destroy them?"

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"He'll have to, or sooner or later the secret will be out."

Braun said in soft logic, "If he can't allow anyone to know about it, then we, too, must be destroyed."

Ross growled, "Then we've got to finish him first."

Patricia said, "Now, I don't know. Don is showing considerably more sense than you two evidently give him credit for. I think in many ways what he's done is quite admirable. He's seen his chance—and has grasped it. Why, I wouldn't be surprised that Don will be the most powerful man in the country within months."

The two men were staring at her. Ross sputtered, "Have you gone completely around the bend? Are you defending this . . this . . ."

A voice chuckled, "Mind your language, Buster. Just take it easy or you'll wind up with some missing teeth."

Ross jumped to his feet as though touched with an electric prod. Dr. Braun stiffened in his chair and his eyes darted about the room.

Patricia alone seemed collected. "Don Crowley!" she exclaimed. "You should be ashamed of yourself, listening in on private conversations."

"Yeah," the voice said. "However, it's handy to know what the other side is dreaming up in the way of a bad time for you. Sit down, Buster. I've got a few things to say."

Muttering, Ross resumed his place. The doctor sighed deeply and sank back onto the sofa he had been occupying. The three could see an indentation magically appear in the upholstery of an easy-chair across from them.

Crowley's voice said confidently; "You know, from the first, I've kept telling you eggheads that I'm not stupid, but none of you've bothered to listen. You think just because you spent six or eight years of your life in some college that you're automatically smarter than other people. But I got a theory, like, that it doesn't make any difference if you spent your whole life going to college, you still wouldn't wind up smart if you didn't start that way."

Ross began to mutter something, but Crowley snapped, "Shut up for a minute, I'm talking." He resumed his condescending tone. "Just for example, take a couple of guys who got to the top. Edison in science and Khrushchev in politics. For all practical purposes, neither of them went to school at all. Khrushchev didn't even learn to read until he was twenty-eight years old.

"Then take Dr. Braun here. He's spent half his life in school, and where's it got him? He'd make more dough if he owned the local garage and dealer franchise for one of the automobile companies in some jerk water town. And look at Ross. He'd probably make more money playing pro football than

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he does messing around with all those test tubes and Bunsen burners and everything. What good has all the school done either?"

Dr. Braun said gently, "Could we get to the point?"

"Take it easy, Doc. I'm in charge here. You just sit and listen. The point is, you three with your smart-Aleck egghead education started off thinking Mr. Common Man, like you call me, is stupid. Well, it just so happens I'm not. Take Pat there. She's smarter than you two, but she had the same idea. That this here country boy isn't as smart as she is. She's going to fox him, see? As soon as she saw the way the cards were falling, she started buttering up to me. She even figured out that I was probably right in this room listening to you planning how to trip me up. So she pretended to take sides against you."

"Why, Don!" Patricia protested.

"Come off it, kid. You probably hate my guts worse than the others. You were the one who thought this *particular* average man was a slob. That all common people were slobs."

Patricia's face went expressionless, but Ross, knowing her well, could sense her dismay. Crowley was right. She had been trying to play a careful game but their supposedly average man had seen through her.

Crowley's voice went thoughtful. "I been doing a lot of thinking this week. A lot of it. And you want to know something? You know what I decided? I decided that everybody talks a lot about the Common Man but actually he's never had a chance to, like, express himself. He's never been able to put over the things he's always wanted."

"Haven't you ever heard of democracy?" Ross said sourly. "Who do you think elects our officials?"

"Shut up, I told you. I'm talking now. Sure, every four years the lousy politicians come around and they stick coonskin caps on their heads or Indian bonnets and start saying ain't when they make their speeches. Showing they're just folks, see? They go out into the country, and stick a straw in their mouth and talk about crops to the farmers, all that sort of thing. But they aren't *really* common folks. Most of them are lawyers or bankers or something. They run those political parties and make all the decisions themselves. The Common Man never really has anything to say about it."

Braun said reasonably, "You have your choice. If you think one candidate is opposed to your interests you can elect the other."

Crowley grunted his contempt. "But they're both the same. No, there hasn't been no common man in Washington since Lincoln, and maybe he wasn't. Well, I'll tell you something. The kind of talk I hear down in the corner saloon from just plain people makes a lot more sense to me than all this stuff the politicians pull."

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Dr. Braun cleared his throat and stared at the seemingly empty chair from whence came the other's belligerent voice. "Are you thinking of entering politics, Don "

"Maybe I am."

"Good heavens," Patricia ejaculated.

"Oh, I'm not smart enough, eh? Well, listen baby, the eggheads don't seem to be so great in there. Maybe it's time the Common Man took over."

Dr. Braun said reasonably, "But see here, Crowley, the ability to achieve invisibility doesn't give you any advantages in swinging elections or . . ." He broke off in mid-sentence and did a mental double take.

Crowley laughed in contempt. "The biggest thing you need to win elections, Doc, is plenty of dough. And I'll have that. But I'll also have the way to do more muckraking than anybody in history. *I'll* sit in on every important private get-together those crook politicians have. I'll get the details of every scheme they cook up. I'll get into any safe or safe deposit box. I'll have the common people, you sneer so much about, screaming for their blood."

Ross rumbled, "What do you expect to accomplish in office, Crowley?"

The voice became expansive. "Lots of things. Take this Cold War. If you drop into any neighborhood bar, you'll hear what the common man thinks about it."

The three of them stared at the seemingly empty chair.

"Drop the bomb first!" Crowley snapped. "Finish those reds off before they start it. In fact, I'm not even sure they've got the bomb. They're not smart enough to . . ."

"There was sputnik, you know," Ross interrupted sourly.

"Yeah, but built by those captured German scientists. We're way ahead of those Russkies in everything. Hit 'em now. Finish 'em off. The eggheads in Washington are scared of their own shadows. Another thing I'd end is getting suckered in by those French and English politicians. What does America need with those countries? They always start up these wars and get us to bail them out. And I say stop all this foreign aid and keep the money in our own country.

"And we can do a lot of cleaning up right here, too. We got to kick all the commies out of the government. Make all the commies and socialists and these egghead liberals, illegal. In fact, I'm in favor of shooting them. When you got an enemy, finish him off. And take the Jews. I'm not anti-Semitic, like, understand. Some of my best friends are Jews. But you got to realize that wherever they go they cause trouble. They stick together and take over the best businesses and all. O.K., you know what I say? I say kick them out of the country. And they all came over here poor and made their money here. So let them leave the way they came. We'll,

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like, confiscate all their property except like personal things."

Patricia had closed her eyes in pain long before this. She said, softly, "I imagine somewhere along in here we'll get to the Negroes."

"I'm not against them. Just so they stay in their place. But this integration stuff is bunk. You got to face facts. Negroes aren't as smart as white people, neither are Chinks or Mexicans or Puerto Ricans. So, O.K., give them their own schools, up to high school is all they need, and let them have jobs like waiters and janitors and like that. They shouldn't take a white man's job and they shouldn't be allowed to marry white people. It deteriorates the race, like."

Crowley was really becoming wound up now. Wound up and expansive. "There's a lot of things I'd change, see. Take freedom of speech and press and like that. Sure I believe in that, I'm one hundred per cent American. But you can't allow people to talk against the government. Freedom of speech is O.K., but you can't let a guy jump up in the middle of a theater and yell fire."

"Why not?" Ross growled. "Freedom of speech is more important than a few movie houses full of people. Besides, if one man is allowed to jump up and yell fire, then somebody else can yell out 'You're a liar, there is no fire.' "

"You're not funny," Crowley said ominously.

"I wasn't trying to be," Ross muttered, and then blurred into sudden action. He shot to his feet, and then, arms extended, dashed toward the source of the voice. He hit the chair without slowing, grappled crazily.

"I've got him!" He wrestled awkwardly, fantastically, seemingly in an insane tumbling without opponent.

Patricia was on her feet. She grasped an antique bronze candle holder and darted toward the now fallen chair and to where Ross was wrestling desperately on the floor. Crowley was attempting to shout, but was largely smothered.

Patricia held the candlestick at the ready, trying to find an opening, trying to locate the invisible Crowley's head.

Frederick Braun staggered to his own feet, bewildered, shaking.

A voice from the door said flatly, "O.K., that's it." Then, sharper, "I said cut it out. You all right, Mr. Crowley?"

It was Larry. His thin black automatic was held almost negligently in his right hand. He ran his eyes up and down Patricia, taking in the candlestick weapon. His ordinarily empty face registered a flicker of amused approval.

Patricia gasped, "Oh, no," dropped her bludgeon and sank into a chair, her head in her hands.

Ross, his face in dismay, came slowly to his feet. The redhead stared at the gunman, momentarily considering further attack. Larry, ignoring both (*Continued on page 156*)

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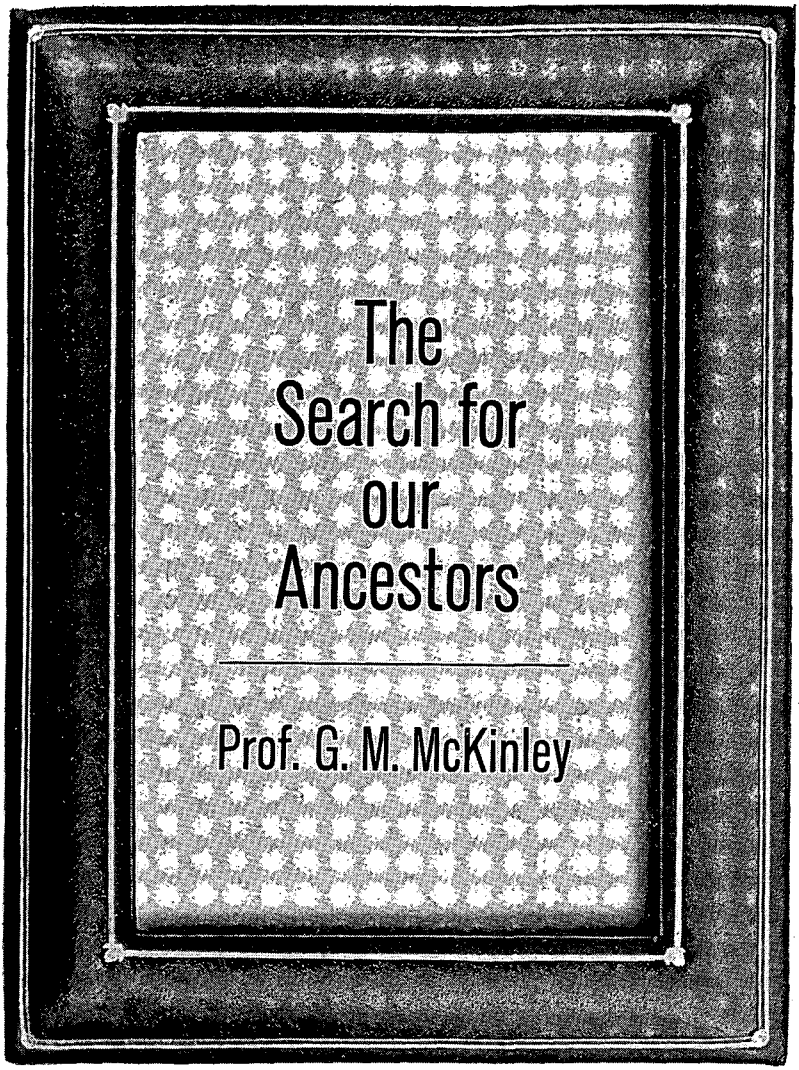

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That the genus Homo *originated somewhere in the Afro-Eurasian land-mass seems pretty solidly established. Bit by bit, a tooth here, a bone there, the trail of Man's ancestry is being traced back to the Beginning . . .*

■ Man enjoys many peculiar advantages over the lesser creatures of his world, but none is more important than his unique ability to be conscious of his kinship to the life preceding him. It is his concern to learn all he can of this kinship, for he has but very recently emerged out of an animal past to take command of the earth, responsible now in this particular corner of the infinite universe for an advancing tip of a cosmic evolutionary process.

The life stream began to flow on earth more than two thousand million years ago, when the rocks had cooled sufficiently to allow hot water vapors of the atmosphere to condense and fill the oceanic depressions. Out of the violent cataclysm of solar origin a planet was formed with temperature range and elements suitable for the organic phase of evolution. The natural process of "coming alive" began gradually, imperceptibly, molecule by molecule, through genes and chromosomes to the appearance of the first cells. From the advent of these free-living microscopic units to man—a period of near two billion years we have an increasingly accurate record left for our examination—the "record of the rocks." Here are the fossils of man's ancestors, the registry of all that he has been, and he is beginning to realize that to understand himself and his destiny he must organize the search and study of this record.

Fig. 1. Portrait of a cousin, wondering where he missed the turn on the path to the future. The chimpanzee "Meshi".

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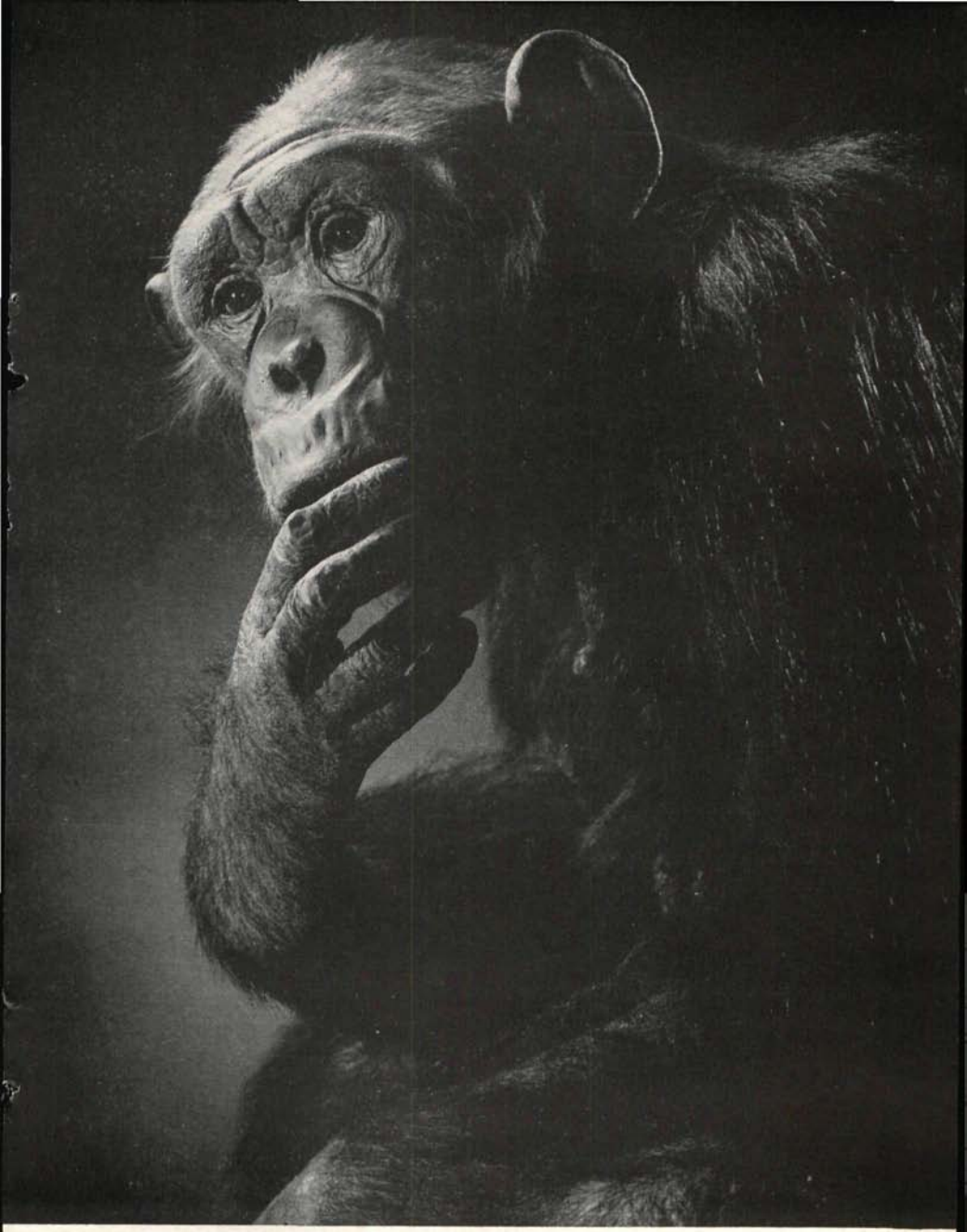

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We know that our modern species, *Homo sapiens*, is physically distinguished from earlier men and "near men" by the possession of an enlarged cranium with high forehead and reduced ridges over the eyes. Man owes his erect posture to the peculiarities of his pelvis and to the graceful, shock-absorbing curvatures of his spine. And, since he no longer fights with his teeth, as do his great ape cousins, his canines have been reduced to the level of the other teeth. His facial makeup is greatly improved by the lower jaw prominence we call the chin.

All peoples now on earth belong to this one species which emerged somewhere in the Old World about 150,000 years ago. Man set out at once on his endless migrations, his restlessness taking him to every spot on the globe. The three main strains of modern man—Negro, Mongoloid and White—differ only superficially. New fossil finds in association with remarkable artifacts now seem to indicate that this human species as it emerged was already in possession of crude tools handed on by prehuman ancestors who had developed the tools through hundreds of thousands of years. Students of man's origin have been greatly stimulated by this new point of view, particularly right now when recent discoveries have added a degree of certainty. It does seem clear that there was a gradual increase in the use of tools by semi-erect bipedal near-men, and even by quadrepedal man-apes through a period extending back more than a million years. This evolution of tools gave direction to the evolution of the higher primate—an interlocking advance of brain, hands and tool use. Once the hands were completely free of locomotor responsibility, the advance was greatly accelerated. This advance, however, has always been uneven. Man's basic nature and his social institutions lag behind so that even now there is certainly some question as to whether he is ready for his newest tool, atomic power.

The greatest find in the history of the search for man's ancestors, a fossil that sets the beginning of our new knowledge and feeling concerning his past, was made in 1925 by Raymond Dart, but not confirmed until years later. This was *Australopithecus africanus*—southern ape of Africa—, the fossil of a small manlike ape. Dart's early study of this fossil, which was the skull of a child, convinced him that here was a very unusual mixture of human and ape characters. He knew that comparisons when not based on adult specimens are of limited value, but he thought that the differences in this case were too great to ignore. So he insisted that his find was intermediate between apes and man. Most scientists thought he had made a blunder. Nevertheless for more than a decade Dart, responding to the needs and sentiments of his dedication, held to his view. Then beginning in 1936 Robert Broom and J. T. Robinson and Dart

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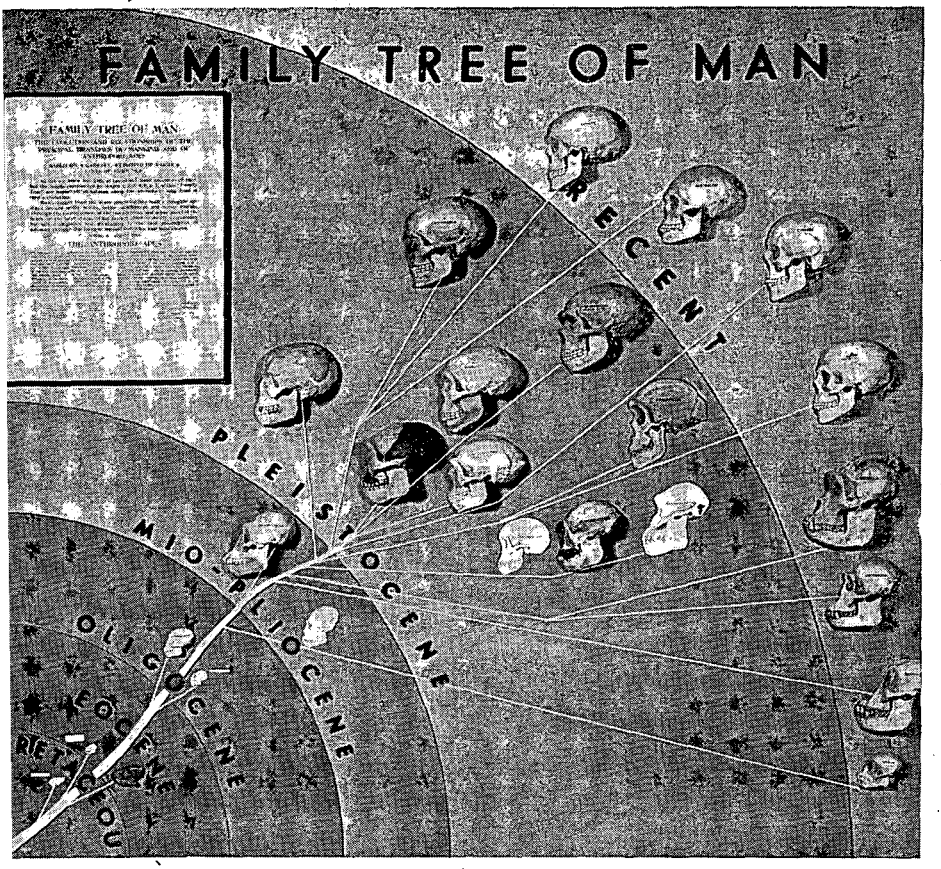

Fig. 2. This diagrammatic type display of the American Museum of Natural History—like most museum displays now!—hasn't quite caught up with the very recent and rapid discoveries in primate evolution, but shows the older findings in their relationship. The leftmost skull in the Pleistocene section is, however, that of "Piltdown" . . . the Little Man Who Wasn't There.

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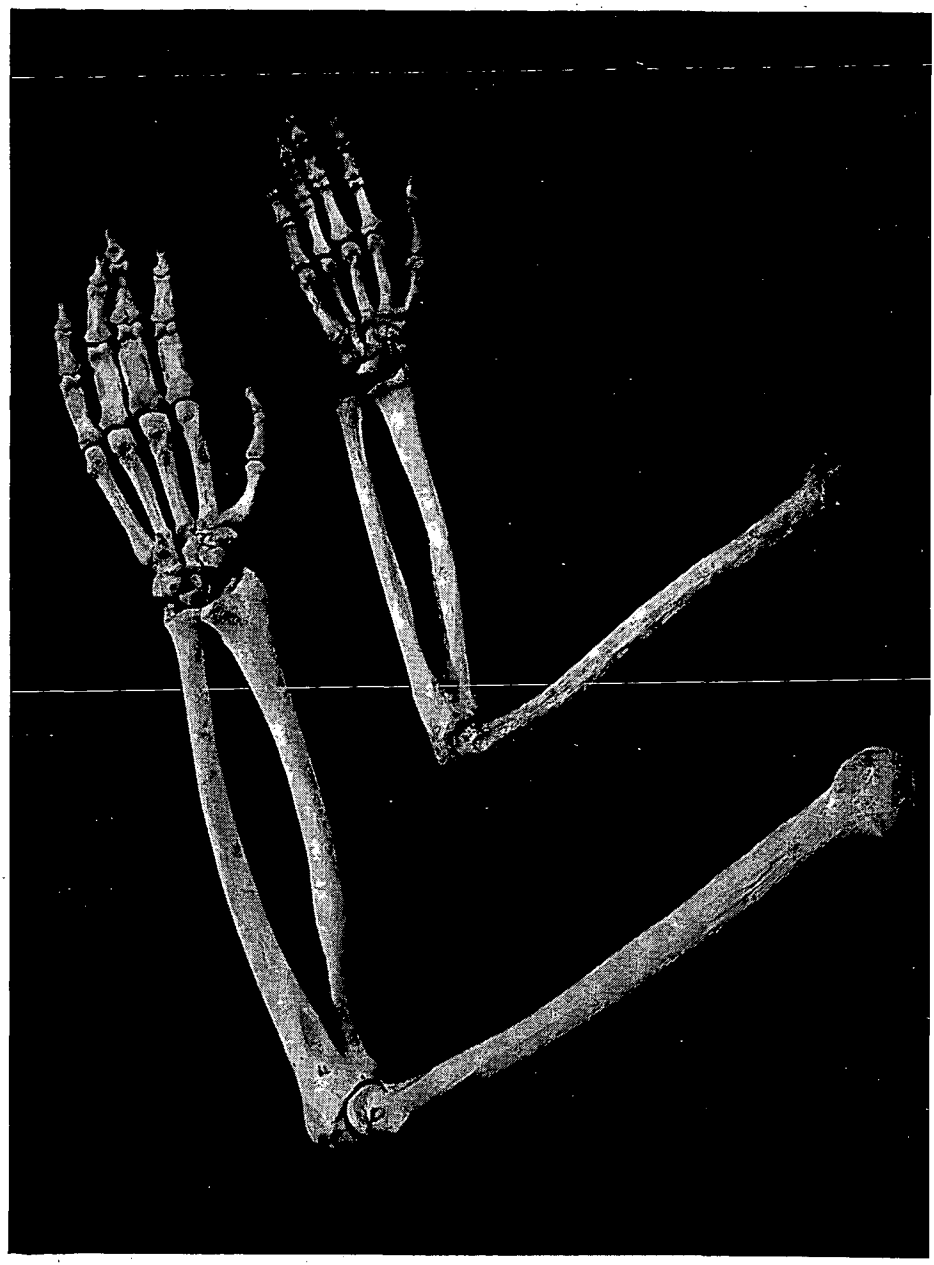

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began to unearth in the Taungs region of South Africa—the place of the original find—fossil after fossil of these man apes, adults and children, and the finds are still being made by these men and others here and elsewhere in Africa—Tanganyika—to as late as the summer of 1960.

It now appears that Dart's knowledge and feeling about his find was wholly right. The Australopithecines are definitely intermediate between apes and man, and intermediate in the broad sense. There are specimens of these ape men which are more ape than man, half and half, and more man than ape, a wonderful range of variation for the anthropologist to work with. They were indeed a strange mixture—an apelike head on a human body. The brain case although apish in appearance was somewhat larger than that of any present day ape and the frontal region—that important highbrow area of modern man—was better developed. The statement that they were more intelligent than any modern ape has been borne out by recent discoveries which add some certainty to the assumption of Dart and Broom that the Australopithecines made good use of crude tools.

The body was surprisingly like that of modern man and there were two main types. In one the body weight was about one hundred twenty pounds average, in the other only half that, a pygmy. In both the posture was nearly or fully erect with the hands free. The earliest of these ape-men—say some 2,000,000 years ago—were probably only partially erect but the latter day individuals—say some 1,000,000 years ago—were probably as erect as you or I. We know this because of the kind of limb bones found, more and more like ours, and because of the somewhat forward position of the articulation of skull with the spinal column, but mostly because in several instances the Australopithecine hip complex, the pelvis, has been recovered. The upper part of the hip bone in present day apes is long and narrow making it difficult, awkward and very tiresome for them to stand erect. In the Australopithecines and modern man this bone is broad and flat, a necessary anatomical feature for easy erect posture. In the ape-men the lower part of the hip complex is somewhat apelike, the upper part human, again the early intermediate mixture. The foot is generally human although the great toe retains more opposability than in modern man. The teeth are quite human even to the arrangement of curved rows except that the canines are slightly larger than in modern man. The Australopithecine was already using other defenses than stabbing teeth.

Fig. 3. The gorilla's arm and hand bones seem very similar indeed to man's. The skeletal differences of that enormously important organ seem minor.

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The general scene of Dart's find —Bechuanaland—is a region of lime stone caves and the man apes were using them as shelter. Their preference for caves at Taungs does not seem to have been shared by their fellows elsewhere in Africa since the remains of ape-men found elsewhere are usually scattered in the open. Taungs is in many ways a lucky fossil cul-de-sac. In the fossil matrix here is a rich relic of all the activities of the man-apes. He killed small animals, probably as an individual hunter and not in co-operative hunting groups. The co-operative hunt is a later development at a level nearer to modern man. His diet preference was similar to modern man, being partly carnivorous. He killed hares and small baboons and dug out moles. Dart thought that there was some evidence that he knew the use of fire, the first step toward human culture, but this, too, was to come later at a stage nearer to modern man.

A study of this situation led to the belief that these early ape men used unfashioned or even crudely fashioned tools. The broken bones of small baboons found in the fossil matrix indicated the use of a striking weapon, a club or a stone in the hand or thrown. The fact that in several places in Africa handsize brook pebbles are found in peculiar grouping in ancient strata at a distance from any brook added to the inference that ape-men were tool users. Even the right size stone held in the hand is a lethal weapon, better than any canine tooth. The right shaped stone is enormously more efficient than the bare hands when digging for roots. Even unfashioned tools of this kind would add greatly to the survival chances of the ground ape users. The right wooden club would be found rarely. The right kind of club could be fashioned by using broken bits of flint.

This kind of speculation ceased to be speculation when crude tools were found with the bones of their makers at Kromdraai, Swartkrans and Sterfontain in South Africa and at Olduvai in Tanganyika. The student of man's evolution points out, Sherwood L. Washburn for instance, that structure alone does not make human behavior. His evolution came about through the interaction of behavior and structure form, any change of either affecting the other. Man's early start came when some 2,000,000 years ago a ground ape gradually developed the bipedal, tool-using way of life leading to the Australopithecines and hence through nearer and nearer man to true man. What evolves here is a gifted primate, playful and full of curiosity, possessing a brain ready to take advantage of and evolve with the pattern of needs and tool use. Selection favors new ways of care for and teaching of children, hunting, fire, nuclear fission, complexities of social life, innumerable intricacies and will continue to do so to the end of our life as a species.

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Fig. 4. The trouble is, the flesh of the gorilla's hand—and the muscles—act like a very badly fitting mitten.

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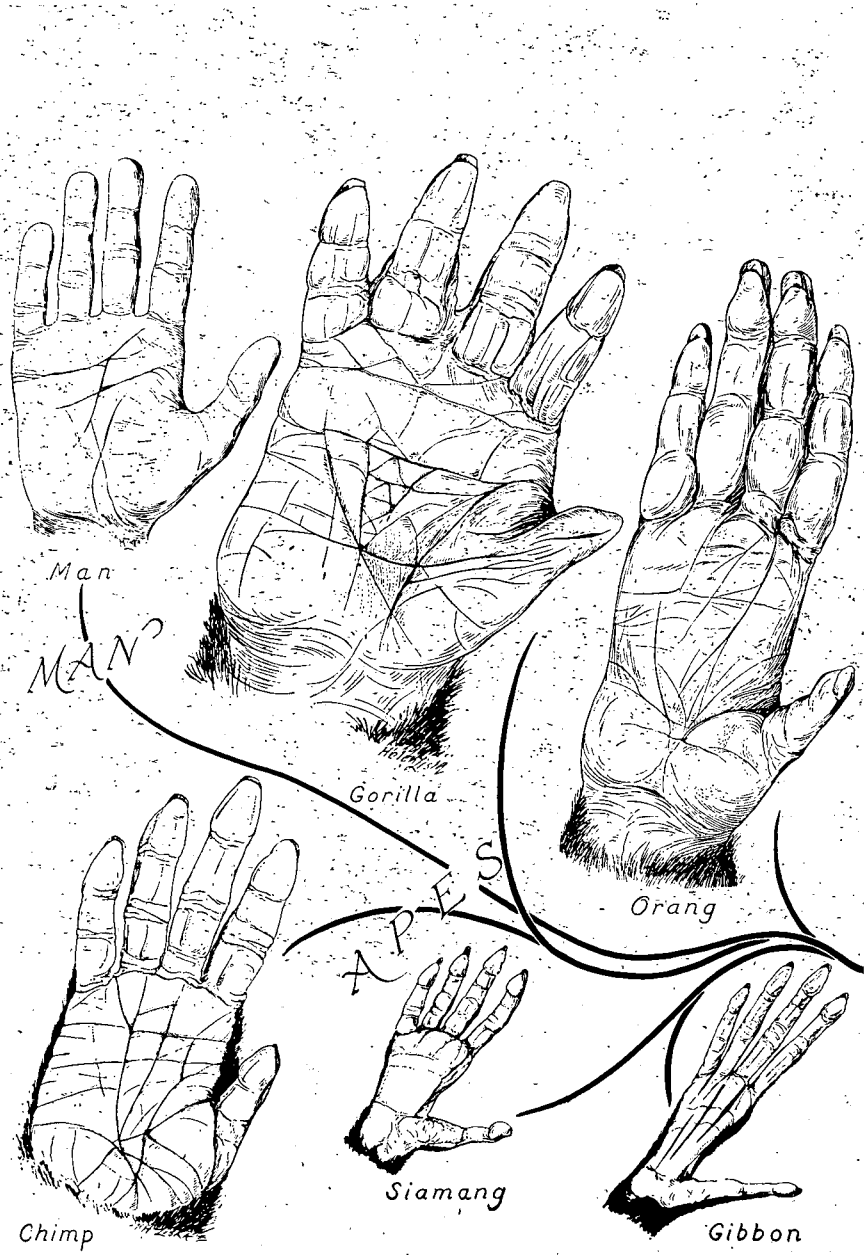

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Fig. 5. Hands of Primates.
A lion is a meat-eater, and has built-in, non-interchangeable butcher's tools for his vocation.
The essence of Man is that his hand serves as an interchangeable plug-in socket for any form of tool.
The other primates missed, one way or another, that critical tool-attachment device.

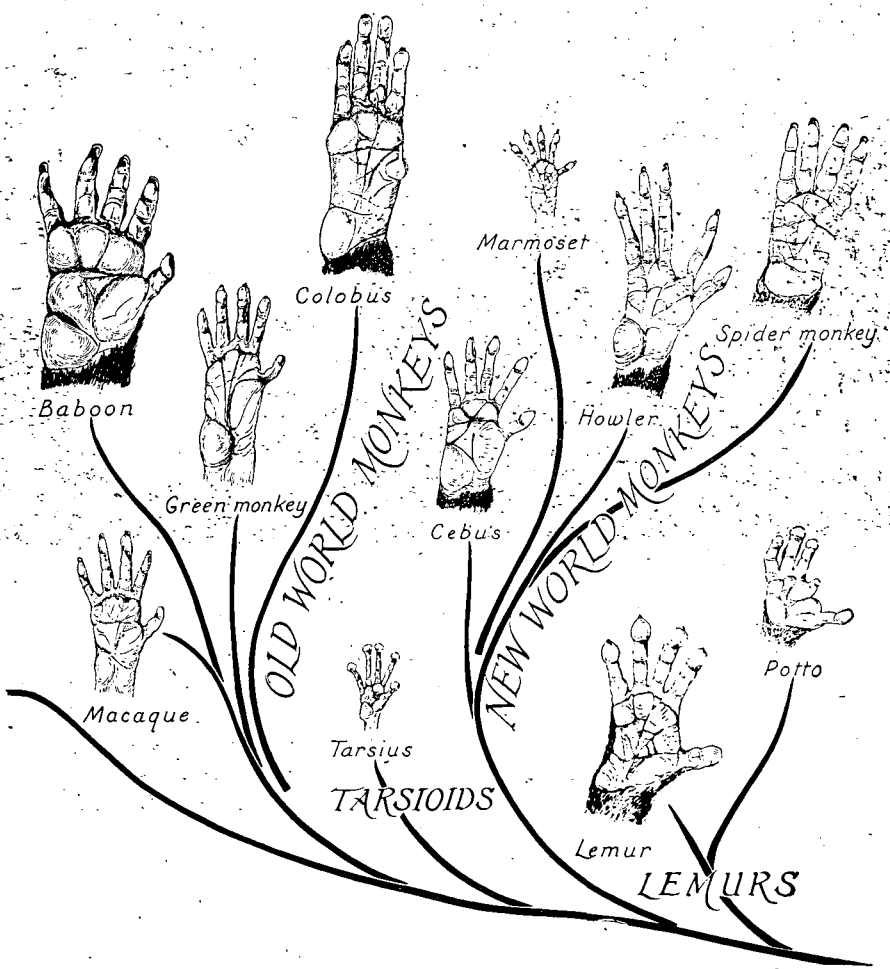

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Fig. 6. The other crucial interchangeable plug-in attachment device is the brain. Man's is extremely specialized in adaptability—you can plug-in all sorts of idea-tools. The chimpanzee's skull has to have much more jaw and tooth, because his smaller brain can't plug-in ideas of mortar-and-pestle grinding, hand-held knives, and fire-cooking to break down the fibers of tough foods.

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The most convincing find of crude tools along with their Australopithecine makers came during the summer of 1959 when Mary Leakey, using highly trained fossil hunting eyes, noticed fragments of a skull protruding from the face of a cliff in the Olduvai Gorge in Tanganyika. The Leakeys, Louis S. B. Leakey and his wife Mary and his sons, have been successful fossil and artifact hunters in this region and elsewhere for many years, but their greatest achievement is this find of one of the larger, advanced type Australopithecines, now called *Zinjanthropus;* "Zing" being an Arabic word for East Africa.

Once Mary Leakey had spotted the skull somewhat up from the floor of the gorge the tedious, endlessly patient digging—sifting is a better word—to uncover it began. It is all hand work. No strip mine, bulldozer methods are ever helpful in these explorations. Even the pick and shovel must be used with considerable care. In this particular case such delicate tools as a dental pick and various sized brushes were used. The skull was fragmented but with care through many days work most of it was recovered, all but the lower jaw which the Leakeys are still hunting. They also recovered leg bones and some parts of a second individual. Gradually the workers clear away overlying earth to the level of the find and then spread out in the same stratum so as to recover the site and living floor as it was when *Zinjanthropus* was alive. This all takes weeks, sometimes months. Recently the Leakeys have been working with the help of a generous grant from the National Geographic Society's Committee for Research and Exploration, and, to emphasize how extremely helpful these grants can be, Leakey reports that in a period of thirteen months with the enlarged staff made possible by the grant he was able to work 92,000 man-hours—much more than he and his wife were able to do in the previous thirty years. And, let us add, these 92,000 man-hours have been wonderfully productive.

When cleared the site of the skull proved to be an ancient living floor, an old campsite now between two geological layers. On this floor were crude stone tools used for cutting up carcasses, for skinning and also some special hammer stones used for cracking bones to get at the marrow. The makers of these tools probably fashioned wooden clubs with their cutting stones. Cracked bones of young animals of the larger breeds—Zebra for one—were found in the matrix along with the bones of rodents and other small animals. There is no evidence that *Zinjanthropus* knew the use of fire, and he had not yet learned to hunt large animals co-operatively with early pre-modern man's devices like the leg entangling bola. How old is this fossil? The Leakeys thought that the geology indicated at least 600,000 years, but later

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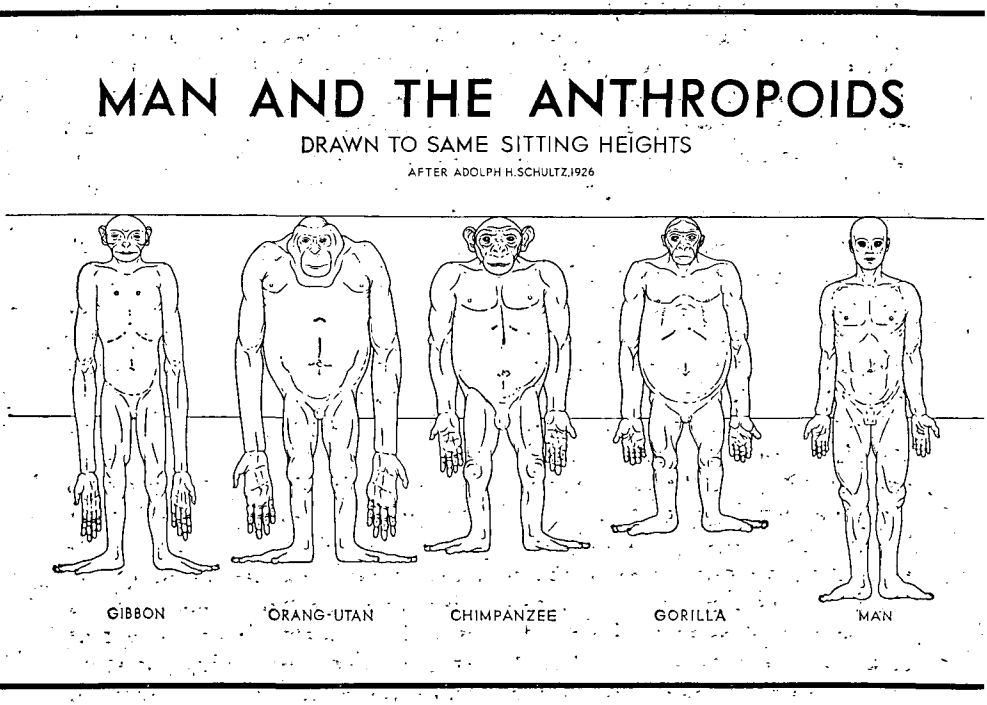

Fig. 7. The old saying that a real man "stands on his own two feet" does have meaning. The tool-holding hand can be so used only if the legs develop enough to take over the entire task of moving. Among the higher primates, Man's head is undistinguished, his hands-arms somewhat under-proportioned, his feet small, and it is his legs that set him apart!

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atomic clock dating, as we shall see, more than doubled that.

The Olduvai Gorge is one of the richest fossil deposits ever discovered. The sloping 300-foot cliffs are made up of layer after layer of the relics and remains of ancestors of man from a semierect ape at the bottom to pre-modern man at the top. At the lowest point in 1960 the Leakeys uncovered the skull of a child of about twelve of a very primitive Australopithecine race. This race, probably still somewhat quadruped, lived near 2,000,000 years ago and eked out a living, according to the fossil matrix, by eating tortoises and catfish. It is doubtful that they used any tools other than hand held, natural pebbles. The side of the skull of the child is fractured as though it had been struck a violent blow, possibly a 2,000,000 year old murder mystery. Above this level is *Zinjanthropus*, the tool maker, first appearing about 1,750,000 years ago according to atomic dating. Still higher and nearer the present time the Leakeys find a very clear and detailed record of Chellean pre-modern man.

The Leakeys had for some years been collecting Chellean artifacts at these levels without any hope of ever recovering a fossil of the maker since no one ever had although this primitive pre-modern man was very widely distributed some 300,000 years ago. His was a very early Stone Age culture, first discovered in 1846 at Chelles in France. In 1960 with the added stimulus and help of the National Geographic Society Leakey concentrated again on these deposits, excavating and clearing a Chellean living floor. Artifacts were plentiful but no fossil. Then while making a careful survey and map of the neighborhood with the idea of clearing another living floor Leakey was led more by the acquired instinct of a life time of fossil hunting than by conscious decision to a spot where erosion had exposed a part of a skull. It was Chellean pre-modern man, the first ever found.

The dating of all these finds and those of others all over the world is a difficult problem. Even a rough approximation is sometimes troublesome. The geologist with his knowledge of the orderly sequence of geological layers of the stratified rocks makes the best appraisal he can of the particular situation, takes into consideration the time element involved in piling up later strata to the present time and then comes up with an approximation. For instance, if he says a given fossil found in a certain geological layer is between 300,000 and 500,000 years old he has a fair chance of being within the range of the actual age. However, when the age is actually in million or millions his guess becomes less and less accurate. He has recourse at times to nature's own way of recording the sequence of stratification—the atomic clock. With this reference he is able to increase his accuracy.

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There are a number of these atomic clocks. For very long periods of time there are the uranium-lead clock, the uranium-helium clock, and the potassium-argon clock. For short periods up to 50,000 years there is the carbon-14 clock. These clocks can be referred to only infrequently, however, since a given situation may not have within it the ingredients necessary for an assay. When the ingredients are present the assay is difficult and a human error is introduced by the elaborate techniques involved. On the whole, however, by referring to an atomic clock the accuracy of the determination of the actual time involved is greatly increased.

Geologists, Garniss H. Curtis and Jack F. Evernden, were able to date Zinjanthropus by the potassium-argon clock because at the camp site level of this fossil, the geological stratum involved contains a volcanic tuff, or ash, of a complex of potassium bearing minerals. A check of the strata showed that volcanic eruptions which produced the ash occurred both just before and after the time of the fossil. The movement of the atomic potassium-argon clock is the gradual conversion of an unstable element potassium-40 into the elements calcium-40 and argon-40 both of which accumulate as time goes by. Argon-40 atoms, being a gas, are boiled out of hot molten lava so the cold ash as it forms starts out with no argon-40 atoms. These accumulate as time goes by because they are imprisoned in the cold ash. The rate of change is very, very slow. The scientist has only to measure the amount of that change to determine the length of time involved. He uses the argon-40 atoms because these can be distinguished from other types of argon atoms. The age is determined by comparing the number of potassium-40 atoms and argon-40 atoms in the present day volcanic ash.

To measure the argon-40 in the ash a mass spectrometer is used. This instrument is so sensitive that it can separate ionized particles according to their atomic weights. First the scientist bakes the ash at 750 degrees Fahrenheit to drive off air argon clinging to the sample. Then he melts the sample at 2,200 degrees Fahrenheit and the imprisoned argon-40 is released. The gas is then carried through porous charcoal cooled to a temperature of 480 degrees below zero Fahrenheit which absorbs and holds the argon-40. Now he is ready for the mass spectrometer which ionizes the argon-40 atoms and then a magnet pulls them to a target where they are registered on a graph. Calculations from this graph gives the age of the sample. In this case 1,750,000 years.

We now know that the Southern and Eastern man-apes of Africa were a complex of populations existing at their most primitive level as much as 2,000,000 years

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ago. From which one of these various diverging populations did the next stage in man's evolution emerge? There is no certainty yet but it would be rather obvious that one of larger types of man-apes was involved. Two of Broom's finds in South Africa offer possibilities, but right now Zinjanthropus in East Africa would seem to be the number one candidate. From these rather advanced man-apes and their stone tools to the earliest known pre-modern man from Java, *Pithecanthropus erectus*—walking erect ape-man—is only a step or two.

Java man, originally discovered in 1891 in central Java, Dutch East Indies, by Eugene Dubois and a closely similar form discovered in 1929 by Davidson Black in caves near Peking, China, are the two most primitive races of the pre-modern group. This group can best be described as of human size with the general posture and appearance and mannerisms of our day except that they were chinless, low brow, flatheads. The low receding forehead is very marked in all of them and would be indicative of limited intelligence, although they did take over and further develop the stone tool culture of their predecessors. The cranial size at the level of Java-Peking some 500,000 years ago was slightly less than the modern-man minimum. Late descendants of the pre-modern group had skulls ranging into modern man's average size. The group gradually died out as modern man began to establish his kingship over the earth some 150,000 years ago. Neanderthal man, the last and most advanced representative of the Java-Peking heritage became extinct, possibly as little as 30,000 years ago.

There is no paucity of fossils in pre-modern man's record which includes even whole skeletons and scores of bones from all over Asia, Africa and Europe. The Group includes finds from Heidelberg and Stinheim in Germany, Swanscombe and Galley Hill in England, Gibralter, Namur in Belgium, Algiers and Rhodesia and Olduvai in Africa, Palestine and Peking and Java in Asia, and so on. The first recording of a truly primitive pre-modern stage in man's evolution, Dubois' find in Java in 1891, did, however, touch off a long controversy inside and outside of science. The first find was too skimpy—a poorly preserved top of a skull, a thigh bone and two molar teeth. Even the finding of several skulls and other parts of the skeleton of a very primitive pre-modern man at Peking did not end the controversy over the Java find. The fact that *Pithecanthropus erectus* of Java is definitely the most primitive pre-modern yet found and hence near or on the possible ancestral line of Australopithecine to modern man was not established until 1938 when G. H. R. von Koenigswald discovered additional fossils along the Solo river in Java.

In 1930 von Koenigswald joined the Geological Survey of the Netherlands East Indies as a paleontolo-

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gist and within a year he and his associates, working along the Solo River, were on the track of early man. In 1931 they recovered parts of two skulls of a pre-modern man with Neanderthal characteristics. They added more skulls and other parts of the body to the collection of "Solo Man" in later years. In 1936 the finding of the skull of a baby and parts of a lower jaw hinted strongly that they were on the track of Pithecanthropus. In 1937 von Koenigswald received a grant from the Carnegie Institute of Washington and he immediately reorganized his search by employing collectors in numbers never before or since attempted. Two Indonesian chief collectors led hundreds of briefly trained natives into the large, eroding area of central Java day after day to crawl around on their hands and knees searching the surface for bones of any kind. A new way to get results.

And the results did come at last although for many weeks the collectors, who were paid by the piece, brought in nothing of any real interest and even, if not watched closely, broke large pieces in half in order to increase their take-home pay. Then a few months after the start of the hunt a native collector brought in a part of a skull. It had come from the banks of a dry stream where erosion had exposed it. With all the available collectors von Koenigswald concentrated on the area and recovered a very nearly complete skull cap which was almost exactly like the Dubois find, except that the important side parts were included and the preservation was better. Now, with his later successes, the total Pithecanthropus relic is adequate.

In Java early pre-modern man wandered about in the tropics. He did not need to seek shelter from the cold in caves, hence he left little for us to find. Contrast this with his very close relative Peking man who, in seeking shelter, established semipermanent residence in caves. He left us one of the most complete and exciting single locality relics in the record. A Swedish scientific mission discovered this situation in 1920, a massive deposit of animal bones, but it remained for the late Davidson Black to prove in 1929 that early pre-humans had also used these caves. His excavations and those of his successor, Franz Weidenreich, through a period of years, recovered bones from some forty different individuals of the Peking race.

The brain case of this pre-modern man, like that of Java, is smaller than in modern man with very low retreating forehead, large, continuous ridges above the eyes and a flattened, chinless face. In posture and size he was manlike, and we are sure that his intelligence was already well above that of any ape or ape-man. He was making use of stone tools, fashioned to be comfortably held in the hand, and with these he could slug, hammer, chop and cut. But above all we rate him

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higher than his Australopithecine predecessors because he knew the use of fire, and fire is a fact of prime cultural significance. Here, as much as 500,000 years ago, man's ancestors were being molded to culture by the coming chill of ice ages. An ape was becoming human by tool use and by overcoming his naturalistic fear of fire. It is quite evident from the several hearths found that he used fire, not only to cook animals, but also to cook his fellows in cannibalistic orgies, thereby setting a trend that still persists in some primitive human tribes.

There is no doubt that the Java-Peking type was soon wide spread in Asia, in Africa and in Europe. From this early type, as observers like Wilfred E. Le Gros Clark see it, there very gradually developed a distinction between two main lines —Neanderthal and Homo sapiens. The Neanderthal line ended in extinction some 30,000 years ago. The Homo sapiens line which gave you and me our being now seems here to stay a very long time and will blend out of itself eventually the still remaining superficial racial distinctions that plague us somewhat in our day. To document this record there are a great many fossils from all over the Old World. Elwyn L. Simons recognizes the difficulty of any one competent researcher becoming familiar with so many fossils scattered in so many widely separated museums and asks for better international co-operation and a freer exchange of specimens. The study and evaluation of already existing collections is in itself an expensive and difficult task, but well worth while.

The Neanderthal line that developed out of the early Java spread gets its name from a fossil found in the Neander Valley in Western Germany in 1856. Through the years many fossils of this ubiquitous, prehistoric type turned up in various places on three continents. Again there were variants and it was at one time thought that modern man had developed from one of the Neanderthal variants. This view was finally abandoned, however, as more and more fossil finds indicated that early primitive Homo sapiens was as old as Neanderthal, in fact had developed alongside and in competition with him.

Typically Neanderthal's head was apelike in appearance with heavy brow ridges, receding forehead, and low cranial vault. But it was a large head, as large or even larger than in some modern men. Due to a peculiar bend in his thigh bone he was somewhat stooped in posture with short legs, habitually flexed at the knee. He had little or no chin. Through several hundreds of thousands of years we find a record of his activities. He progressed in the fashioning of old stone-age tools. He organized and disciplined himself in forming groups of several families for the hunting and gathering of food. His

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mind was receptive to and questioned the mysteries of the world around him. He lived with death constantly before him in the dangers of the elements, of the hunt, of disease. Eventually he sought protection and comfort by imagining all-powerful and supernatural beings. He may well have been first to fear the supernatural and to sense the enigma of self and the riddle of birth and death. This we may say because his is the earliest known burial where there was obvious care and concern for the departed. We find clear evidence of religious ceremony, the development of a religious form (Bear Cult).

Why, with a mind capable of such symbolism, did he fail? Was it because of any early physical or social handicap? We think not. He failed, it would seem, because his genetic determiners, the genes, and natural selection did not finally provide him with the very superior combination that now determines the contour, the structure, and the function of the brain of our race, Homo sapiens. He simply could not forever compete with the increasing powers of the great brain of modern man. The rising forehead and vault of the skull of our race, a continuation of the trend set up even in the early ape-men gradually made room for those specialized cerebral areas which give us our unique and unassailable position in the animal kingdom. Here lie the fabulously increased powers of symbolism, of idea and poetic association, of abstraction, of memory, of reason. Here we find our disciplines and conscience and, unfortunately, our exaggerations of anxiety, our tendency to worry, worry.

The history of modern man's vertical forehead and chin can be sketched out from fossils which indicate that the origin of the two lines—Neanderthal and modern man—occurred a very long time ago. Kanjera Man, an early type Homo sapiens with advanced forehead and some chin, is from East Africa and about 300,000 years old. Fontechevade Man from Europe with fully vertical forehead and chin is more than 100,000 years old. Steinheim Man and Ehringsdorf Man from Germany, of great age, seem intermediate between Java and Modern man. Solo Man and Palestine Man from Asia and Rhodesian Man from Africa, of great age, show mixed characteristics of Neanderthal and modern man. Heidelberg Man from Germany was close to Java. And then there is, of course the very famous and fully human Cro-Magnon who got his name from the French cave in which he was first found. Cro-Magnon probably started to develop his superb physique, his religious cults and his great artistry in Asia more than 150,000 years ago. Cro-magnon's vividly painted portraits of the animals of his day in everlasting natural ochers on the walls of caves in France and Spain has inspired his descendants of our day more than anything else from the remote past.

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The number of fossils in the line Australopithecine to Java to Homo is becoming more and more an adequate series. Le Gros Clark finds it satisfactory. The list will grow as new fossils are found, particularly as more grants are available. Researchers will get a better look at existing fossils through better international exchange. Some researchers in the field are saying that the great need now is an all-out effort to date more accurately the geological layers of our earth. Refinement of the atomic clock methods of dating and wide spread use would be a boon to the sciences of rocks and fossils. As our knowledge of the upper levels of primate evolution increases we are more and more anxious to add to our limited collections from that very long period before the advent of the southern apes of Africa.

Both man and the great apes—gorilla, chimpanzee, orangutan, gibbon—it now seems rather certain descended from a common primate ancestor which lived some 20,000,000 or more years ago. The search for this ancestor is still going on, but we do have at this moment at least three candidates. The search has led directly to a semi-ape, semi-monkey creature like *Limnopithecus* or *Pliopithecus* or *Proconsul*. All three may be near the line that led to man and the great apes, or extinct offshoots from that line. These three primates, unlike the true monkey, were capable of leading a comfortable double life—on the ground or in the trees. Their ancestors had descended from trees to take advantage of rich bushy grass lands which were supplanting the tropical forests of a former warmer and wetter age. Proconsul—from Africa—of which there were three species, could climb trees easily enough, but he was gradually being equipped with heel and leg bones capable of a semierect posture on the ground, at least for short periods of time. Some observers think that Proconsul may have been quite close to the point of separation of the human line from that of the great apes.

Recently the finding of a nearly complete skeleton of a very ancient, vaguely humanized primate in a coal mine at Tuscany, Italy, brought to an end one of the longest fossil hunts in history. For eighty-eight years off and on fragments of what could have been monkey, ape or even preape-man kept appearing in diggings in the mines of this area. In recent years the Swiss fossil scientist Johannes Hürzeler had been active in trying to organize some kind of direct approach in this situation, but the mining is now done by machinery and the best he could do was gain the friendship of the workers and instruct them in what to look for. From fragments only this primate was given the name *Oreopithecus* and Hürzeler became convinced that certain jaw fragments indicated a position close to the early line leading to the southern apes of

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Africa and hence to man. Although *Oreopithecus* was probably many times over shoveled into someone's furnace there did come a day in 1958 when the mining machinery passed under a small area exposing in the roof of the mine a full skeleton. This find dates from about 12,000,000 years ago. Hürzeler, it now seems, was right in his claim that it is on the side of man, that is, it came into existence after the separation of the human line from that of the great apes. However, the opinion now is that it branched off that line and became extinct.

As it stands now we have a record of forms like the *Proconsul* of some 20,000,000 or more years ago, forms which anticipated the division leading to man. Then about 10,000,000 years later we have a form like *Oreopithecus* which indicates advances along the line to man. And then after another 10,000,000 or so years we have the beginning of the increasingly satisfactory record—Australopithecines to Java to Homo.

Obviously we need more fossils from before and after the separation between man and the great apes. There are scattered fossils all along the line of primate development beginning with its origin of more than 100,000,000 years ago. Naturally researchers would like to fill in here and there with something that would give them a more complete picture of the continuity. There are known regions where well financed exploration and collecting expeditions would certainly add to our knowledge. Elwyn L. Simons thinks that the greatest reward would come from regions like the Siwalik Hills in Northwestern India and Eastern West Pakistan and the Fayum region southwest of Cairo, Egypt. In these areas there is every indication that early primates from before and after the separation of the human line will be found. The several fields in Africa which have revealed so much of our early history will continue to reveal more and more as they are worked. In other parts of the Old World accidental finds will lead us to new areas of promise.

It is worth while to look at this evolution of Man in terms of the scale of the Universe as a whole.

The Solar System, according to best estimates now available, is about five billion years old; it is in an immense orbit around the center of mass of the entire Milky Way galaxy at about 200 miles per second. In the five billion years since it formed, it has swung around the entire galaxy some twenty-five times.

Primate development started about half a Galactic Year ago—about 100,000,000 Earth-years. When the first ancestral primate appeared, our System was at the other extreme of the Galaxy; those first primates looked into night skies in which no suggestion of any constellation we now know existed. Even the external galaxies

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we can see—M31 in Andromeda and the Magellanic Clouds—would not have been visible, hidden behind the mass of galactic dust and gas. (As we can not know what nearby galaxies lie in the direction of the center of the galaxy now!)

Then twenty million years ago, when the *Proconsul* forms began to appear, the System had swung almost around to where we now are. Call our present locus twelve o'clock, and the earliest primates showed when Earth and the Solar System were at the six o'clock position. By *Proconsul*-time, the System had swung all the way around to between ten and eleven o'clock. Australopithecines and the Java types appeared so recently that the first faint outlines of the stellar patterns we know were beginning to appear in the night skies. The Magellanic Clouds and Andromeda were in view. The dust and gas cloud from which the Orion complex stars were forming was gathering itself together; Rigel and Betelgeuse were going into thermonuclear reaction about the time of Java man.

The time since History began, however, is so short that Man has called them "the fixed stars."

Yet the very young branch of life called the Primates is not only older than the hills—for many of the mountain ranges we know have been thrust up during those 100,000,000 years—but older than many of the stars themselves.

An individual's life may be short—but Life takes the long view. If there is a mountain barrier in the way—Life can wait; the rains will was the mountains away presently, and Life can pass. If there is an ocean . . . a little patience, and there'll be a landbridge along any aeon now.

Evolution takes time. The Primate family alone is older than most of the first-magnitude stars we see in our night skies—for most of the first-magnitude stars are fast-burning giant suns. It takes a quiet, stable, long-lived star to last long enough to sustain an evolving life chain.

Historians tell us that the reason and use of history is to gain some knowledge and understanding of ourselves and of our problems. The long record of our ascent from lower forms of life, along with the study of the evolutionary mechanism involved, is a very necessary contribution to that knowledge and understanding. To ignore it or to substitute myth is to forever forego the opportunity of replacing the blind forces of nature with conscious direction. No mythology, Greek or otherwise, has ever been as meaningful in perspective as the two billion year old reality of the evolution of man, best realized when we condense the unimaginable aeons into some comprehensible scale, say one calendar year.

On this twelve-month scale life's ultra microscopic controlling mechanism, the gene and its associa-

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tion we call the chromosome, is delayed until February, and the very great advance toward unicellular life with all its promise is not well underway until March. Unicellular and then multicellular organisms differentiate and diverge in the swelling seas through April, May and June, led at last by the backboneless animals, the invertebrates. On July 1st, halfway through the year, those backboned cousins of man, the vertebrates, have not yet emerged, no multicellular plant is to be found anywhere, and the land is a naked waste.

During the weeks that follow, land plants appear, confined at first to moist places, and invertebrates, followed by vertebrates, crawl out of the water to exploit the protective shadow and rich substance offered there. In the fall the dry uplands take on the cover of grasses, flowering plants and deciduous trees. Giant reptiles, as in a horror film, cross the horizon and disappear. Birds take to the air and there emerges below them a furtive, diminutive, insectivore, the shrew, whose big brained, inventive, mammalian descendants, ending in man, are destined to fly faster and farther than any bird.

Now evolution is accelerating and in the primate emphasizing greater teachability as the brain enlarges and differentiates. In the closing weeks of the year the line of ascent in the primates divides, leading in one branch to the great apes and in the other to the immediate ancestors of man. But it is not until toward the last day of the year that near men have arrived, and not until the very last hour before midnight, December 31st, that modern man appears. ■

IN TIMES TO COME

Next month's issue brings a novelette by Rick Raphael—"Code Three." You may recall Raphael's wacky humor pieces—"A Filbert is a Nut" appeared also in the Doubleday anthology—but with this one Raphael is on a very different tack.

When I was a boy, cars on a Sunday afternoon didn't drive bumper to bumper because they didn't have bumpers. Above such screaming speeds as forty miles an hour their steering mechanism was given to going into oscillation. And, of course, roads on which anything could go forty or more were mighty darn seldom anyway.

Today's legal highway speeds up to eighty miles are fairly common so let's take a look at the problem of the Thruway Police a generation hence—take a ride in a police car cruising at five fifty with a built-in emergency ward.

The Editor.

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CRUCIAL EXPERIMENT

by Joseph Goodavage

ASTRO-WEATHER
January, 1963

Very moderate weather in the far western sections of the country will, in eastward transit, harden into a bitterly cold winter in the region of the Great Lakes.

A semi-stationary element of high pressure and strong winds, activated on January 4th-5th, will dominate the upper Midwest and intensify eastward through the Ohio Valley. At the same time, periodic southing cold, dry, air masses will cause sharply falling temperatures in California and the extreme southwest.

Heavy snowfall over the Sierra Nevada mountains on January 8th will spread into the far southwest. The temperatures will drop again on the 9th, the 12th and the 20th of January in this section of the nation.

We can expect seasonably moderate temperatures this month in the far west; warmer temperatures will extend to the higher inlands on January 5th and 6th, the 12th and 18th.

On the 10th to 11th of January, from the Ohio Valley to the southern and eastern shores of the Great Lakes—a severe cold front and high winds will pile snow eastward to the Buffalo, New York, area.

An unusual dominating pattern over the Gulf states, which would normally indicate dry and mild temperatures, will be offset to some extent by the intensity of the cold up north. As a criterion, the prevailing low temperatures in the Gulf states on January 11th, 12th and 26th will provide clues as to how far south these freezes will penetrate. Check local weather reports a day in advance for freeze warnings.

Since an inch of rain is the average equivalent of ten inches of snow, it is recommended that motorists recheck batteries, tires, carburetors and mufflers early this month. Southern routes are strongly suggested for long-haul highway transportation after January 15th. Generally northing lows spawning in the Pacific Northwest will continue to center more often over the northern states and veer southeastward over the Rockies.

Heating fuel transportation should be planned to provide *excess* supplies in northern stockpiles and in areas east of the Appala-

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chians *before* January 23rd. This applies also to Texas and southwestern plains areas. Anticipate many transportation delays after that date.

On January 18th: Blizzards stemming eastward from the upper Mississippi Valley with severe cold wave conditions trailing eastward, but diminishing southward. This frigid air will intensify in the Pittsburgh, Pennsylvania, area and will be a preview of the Arctic blast which will arrive on the evening of the 25th.

Such atmospheric conditions usually reach New York twelve hours later than Pittsburgh, and twenty hours later at Boston . . . but at this period of the month the eastward speed is retarded by about ten per cent.

The severe cold wave will invade the northern half of the nation from the Dakotas on January 23rd, building to maximum intensity in eastward transit through Chicago, Detroit, Louisville, Pittsburgh, Buffalo and New York late on the 25th and early on the 26th. New England will get the cold blast on the 26th and 27th.

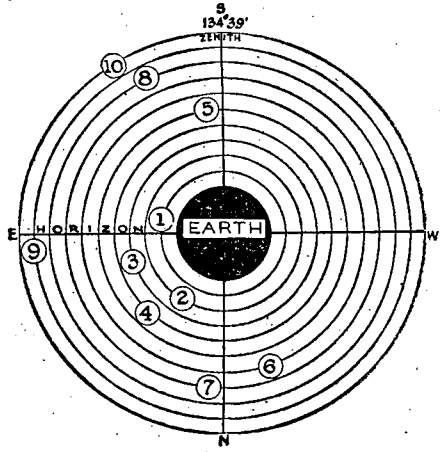
This will herald the *beginning* of a true Deep Freeze.

Clockwise air flows in eastward transit will generate low pressure areas over Texas and the lower plains as well as in the central Rockies. As a result, expect more precipitation over the center of the nation from Denver eastward.

In astrology, influenza is characterized as a *Saturnine* ailment. Anyone interested will find Saturn in geocentric longitude 315° 43′ on February 19th. This position "triggers" a crucial degree of the great conjunction-eclipse of February 4, 1962. The health department, which is aware of certain cycles, has already warned of flu this winter. But this theory can be checked on the specified date and the effect traced to its probable source.

ASTRO-WEATHER,
WINTER SOLSTICE, 1962-63

Prepare for a variable, intensely cold winter this year. From the Dakotas and Nebraska and eastward to the Atlantic seaboard—and from Raleigh, North Carolina up into Maine will be gripped in winter's deepest freeze from January 25th to February 4th. This includes eastern Canada, and is interpreted from Fig. "A".



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With some variation, this pattern resembles a chart for the winter of 1933-34—one of the coldest on record.

A persistent, abnormal cold wave across the northern states will be relieved only by brief thaws. It will extend eastward to the Pittsburgh, Pennsylvania and Buffalo, New York areas.

Northwest air flows will amplify into blizzards that will pile great masses of snow over the eastern and southern shore areas of the Great Lakes. Ice on the lakes and all nearby inland waterways will pose some grave problems for the cargo industry. Northeastern streams, lakes and rivers will be frozen solid.

Beginning on January 26th, even more snow will pile up east of the Appalachians and the abnormal cold will continue through March. In fact, March will bring *new* low temperatures and late March snowfalls in the northeastern inlands. From north of Chicago to the Atlantic coast, it will be a very late spring.

In sharp contrast, the southern states east of Texas, Kansas and Oklahoma, will experience variable, but far more temperate weather—even occasional sharp rises in temperature. Some localities will be reporting excessive dry spells while others are being hit by flash rains. Any snow that falls in the Deep South within this area will quickly dissipate.

Easterly winds on the southern ends of high pressure areas with clockwise air flows will be conducive to lows and snowfalls in Texas and other southern plains areas.

The mildest winter weather will be in the far west. Low pressure areas over northern states indicates heavier accumulation of snow during February. On February 5th, a heavy snowfall over the Sierras will pull a cold wave southward. Several snowstorms breeding in the northwest will have a tendency to be swept southeastward over the Rockies. The center of the nation east of the Mississippi will be this winter's most active storm belt.

ASTRO-METEOROLOGY'S WORLD WINTER PATTERNS

With seventy per cent of the celestial bodies south of the Earth's equator during the winter months, the current trend of severe winters in the northern hemisphere is approaching its peak. Conversely, intensely hot regions during the southern hemisphere's summer will slowly wane.

Because the difference in time between one vernal equinox and the next is 5 hours, 48 minutes, 45.51 seconds over 365 days, the Earth during that interval revolves on its axis about 87 degrees to the *east*. This accounts for the fact that maximum intensity of certain weather anomalies repeat farther *westward* each year and return to approximately the same terrestrial region four years afterward ($4x87° = 348°$).

Thus severely cold winters or

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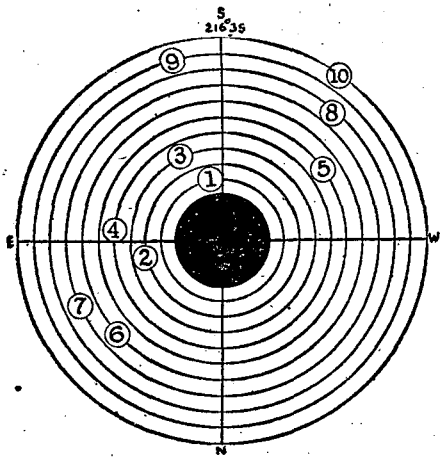
scorching hot summers do not repeat year after year in any one region.

EUROPE:

This winter's weather for the eastern Atlantic and Europe is determined from Fig. "B" transposed to the meridian of London, England.



For southern Europe and eastern Spain to Longitude 24° East in the Balkans: Excessive cloudiness and humidity—frequent moist warm southerly winds which will induce abnormal precipitation over inland areas. This pattern will increase eastward from South Germany, Switzerland and Italy.

Flash rains, inland snow, alternate thaws and freezes will create dangerous avalanche hazards in the Alps and other mountainous areas. Snows from eastern France will blend into colder, more variable winter weather in Germany, which will experience its lowest temperatures on January 18th-19th, 26th-27th and February 15th, 22nd and 23rd.

February is likely to bring disastrous earthquakes and volcanic belches from Mt. Vesuvius in Italy and Mt. Etna in Sicily.

INDIA AND CHINA:

Abnormally cold weather will dominate eastern India and blanket southeastern China. But the mildest winter temperatures and abnormal dryness over northern China will intensify drought conditions eastward to the Peiping area.

Periodic, migrating droughts in various world regions will be developing during the next six months. Early potential dates: January 12th & 13th; February 6th & 7th, and March 6th and 7th.

This winter's dominating pattern over the eastern third of the United States and Canada has not occurred since 1934 and will not be repeated again in this region until 1992. Just prior to this period, the rare conjunction of Saturn and Uranus *at their winter solstice colures* (0° Capricorn) indicates the coldest winters in more than a century in the northern hemisphere.

The previously mentioned "great conjunction-eclipse" of February 4, 1962, which received such light treatment in the nation's press, and concentrated on a handful of crack-

(*Continued on page 155*)

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Space Viking

Part three of four parts.
To maintain a huge and spreading search for one deeply hated man takes a great organization—and an enduring powerful building program to forge and mantain it.

by H. Beam Piper

Illustrated by Schoenherr

Gram is one of the Sword-Worlds, colonized in the Ninth Century of the Atomic Era by the losers of the System States War. Seeking a new home beyond the reach of the victorious Terran Federation, they discovered and occupied a dozen planets, naming all of them for swords renowned in Old Terran legend, developing on them a technologically advanced civilization and a feudal society enlivened by interbaronial skirmishing and dynastic wars. Then, after four centuries, one of their ships ventured back among the Federation planets and returned with the news that the Terran Federation had ceased to exist.

The Federation Space Navy has fallen to pieces, and with it Federation authority. Planets have seceded with impunity. The Federation has abandoned others, unable to govern them from Terra. Some have been devastated by interstellar war, some rent by internal strife, and finally the Neobarbarians, the enemies every civilization breeds within in its own population, have risen, and the downward slide of decivilization has begun.

A few have retained the technologies

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of the Federation and are too strong to raid; a few have sunk to Stone Age savagery. Between these extremes are many from which the better armed Sword-Worlders can take rich booty, and ship after ship goes out to raid and pillage. At first, these Space Vikings, as they have begun to call themselves, return between forays to the Sword-Worlds. Before long, however, they are establishing bases within the Old Federation on decivilized planets they have conquered and industrialized. Each ship carries away some of the best

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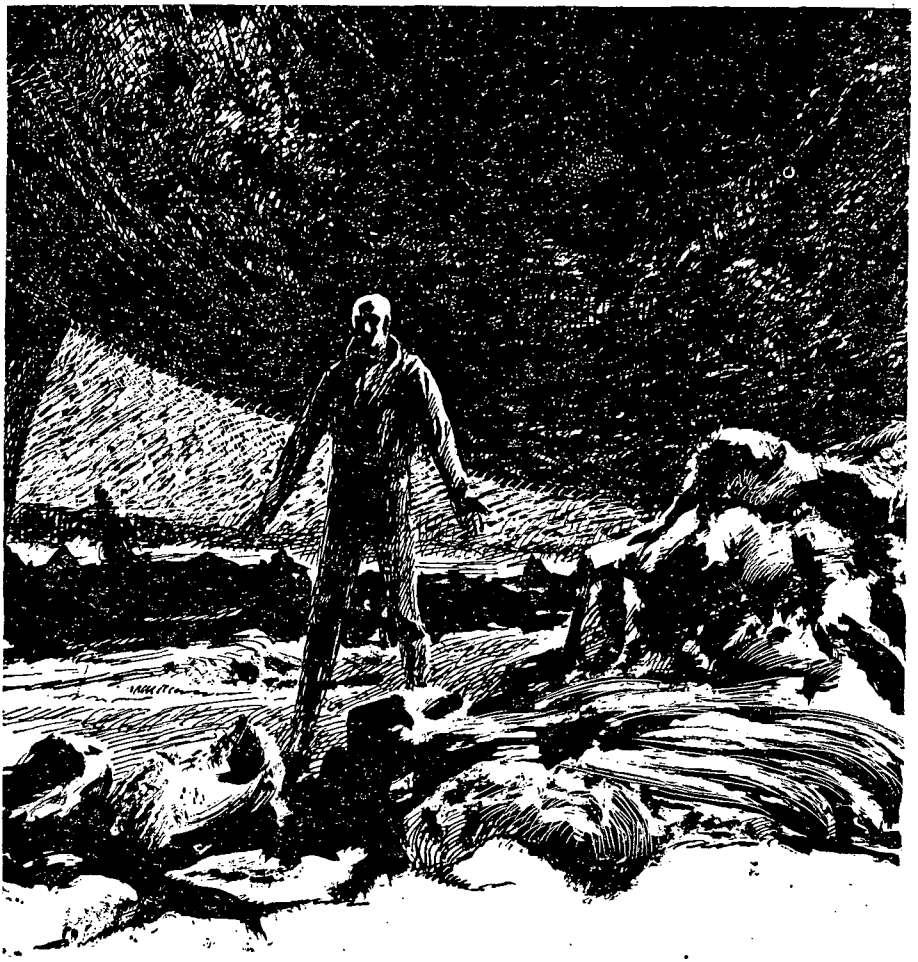

brains and blood of the Sword-Worlds; the whole level of Sword-World life is sinking, slowly and almost imperceptibly.

One of the few who realize this is LUCAS TRASK, Baron of Traskon, a wealthy landowning nobleman of Gram. He deplores the effect of Space Viking raiding on the Sword-Worlds, and most of all he deplores the activity of Angus, Duke of Wardshaven, who has built a ship, the Enterprise, *to establish a base on Tanith, an almost completely decivilized planet three thou-*

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sand light-years from Gram. However, he strongly supports Duke Angus in his ambition to make himself King of Gram, seeing a unified planetary sovereignty as the only alternative to anarchy.

However, less than half an hour after he has been married to ELAINE KARVALL, whom he deeply loves, she is shot to death by ANDRAY DUNNAN, Duke Angus' psychopathic nephew. Wounded himself, he learns of her death on recovering consciousness. Dunnan has made his escape by capturing his uncle's ship, the Enterprise, *with the aid of a company of mercenaries he has recruited, and has taken her to space. With nothing to live for but revenge, Trask trades his barony for another ship, and enlists OTTO HARKAMAN, a veteran Space Viking whom Duke Angus has brought to Gram to command the* Enterprise, *to captain this ship, which he names* Nemesis, *for him. Harkaman, whose hobby is the study of history and who is convinced that anything that can happen has happened, somewhere and sometime, before, becomes his devoted follower. Trask, who has long inveighed against Space Viking raiding, turns Space Viking himself.*

Believing that Dunnan has taken the Enterprise *to Tanith to establish a base there ahead of his uncle, whom he hates, Trask and Harkaman go thither in the* Nemesis. *Instead of Dunnan, they find there BOAKE VALKANHAYN and GARVAN SPASSO, a disreputable pair of "chicken-thieves," self-styled Space Vikings who raid only planets whose inhabitants have nothing to fight with and nothing worth fighting for; captains, respectively, of the* Space Scourge *and the* Lamia. *Valkanhayn and Spasso have heard rumors that the Duke of Wardshaven plans to establish a base on Tanith, and have hastened thither to bluff their way in on it.*

Convinced that Dunnan will come to Tanith sooner or later, Trask decided to establish there a base of the sort Duke Angus had contemplated, and takes Valkanhayn and Spasso in with him. To build the shipyards and other things needed for a Viking raiding base, a great deal of equipment will be needed, and most of this will have to come from Gram. Duke Angus and the other investors in the Tanith Adventure have lost everything they put into it when Dunnan pirated the Enterprise. *They may be convinced that they can recoup their losses by investing in Trask's Tanith base. They must, however, be shown that Tanith is a paying proposition. This means that he must make a few spectacularly successful raids, which, in turn, means converting the* Space Scourge *and the* Lamia *from the spaceborne junkpiles they now are into battleworthy raiding craft, and their slovenly crews into real spacemen and fighting men. After great difficulties, he and Harkaman succeed. It is decided to leave the* Lamia *to hold Tanith and take the* Nemesis *and the* Space Scourge *raiding. Harkaman has selected three planets, all reasonably close—Khepera, Amaterasu, and Beowulf.*

Khepera sickens Trask. It was selected as the first target to give the Nemesis

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crew some safe combat training and the Valkanhayn-Spasso gang confidence in themselves. When they landed, it was not combat, it was massacre, and what had followed had been worse. After they lifted out, he seemed to see Elaine looking at him in horror, and he tried to hide his face from her, until he realized that he was trying to hide it from himself.

Amaterasu is better; there is no question of sympathizing with anybody on it. They come in over the city of Eglonsby, drop a demonstration bomb, and summon it to surrender, which the local government promptly does. Then the Eglonsby dictator makes a proposition. The neighboring government of Stolgoland has huge gold reserves, and he knows just where they are. If the Space Vikings will raid Stolgoland, he will furnish troops to help them; all he asks is that his troops be left in possession of the country when the Vikings lift out. At the same time, the Stolgonians, hearing that Eglonsby has been invaded by Space Vikings, are mobilizing to take advantage of the situation.

Airlifted in by Space Viking contragravity, the Eglonsby troops occupy the capital of Stolgoland, with all the usual atrocities, and while the Vikings are cleaning out the Stolgonian goldhoards the Eglonsby dictator is preparing to put the Stolgonian government on trial as war criminals. As soon as they have gotten the Stolgonian gold, the Space Vikings return to Eglonsby and clean it out, too. None of them can quite believe how much loot they have taken. Harkaman has done most of his personal looting in the historical section of the Eglonsby library.

And Beowulf was a nightmare. Beowulf is practically a civilized planet; unlike Amaterasu, they have nuclear energy, contragravity, and even normal-space interplanetary ships; everything but the Dillingham hyperdrive. Nobody understands why they don't have that, too.

From Beowulf, they want to get refined plutonium and nuclear-electric conversion units; the target is a complex of fissionable-ore mines, refineries and reaction-plants in the Antarctic. It is a continuous battle from the time they emerge from hyperspace two light-seconds off-planet, and by the time they have collected what they want and are spacing out, both ships have been heavily damaged.

Boake Valkanhayn, however, is happy. He has behaved most creditably during the fighting, and nobody can call this chicken-stealing.

There has been a considerable change in Valkanhayn; Trask has first noticed it on Amaterasu. He had been a good man, once, and had stopped caring and let himself go; now he has taken hold again and is acting like a real Space Viking instead of a bum. Spasso, on the other hand, never was any good and never will be. It is decided to send the Space Scourge *to Gram with Valkanhayn in command, and some of the Wardshaven nobles, who joined the* Nemesis *company as gentlemen-adventurers, to talk to Duke Angus and the other investors in the original Tanith Adventure. To get rid of him, they Spasso along, and will ask Duke Angus to give him some meaningless but impressive title and keep him on Gram.*

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When, sixty-five hundred hours later, the Space Scourge *returns, accompanied by a chartered freighter, she is commanded by Baron Valkanhayn, who greets them as Prince Trask and Admiral Count Harkaman; Duke Angus is now King Angus I of Gram; he has also annexed Tanith and appointed Trask Viceroy. Harkaman is inclined to bristle at this, but Trask is satisfied. King Angus is three thousand light-years away. And Sir Garvan Spasso is now chief of police of the conquered duchy of Glaspyth, from which Angus has evicted his bitterest enemy, Duke Omfray, and any chickens he steals there, he steals the whole farm to get them.*

From the books plundered from the Eglonsby library, Harkaman has learned an odd thing. Amaterasu has no known sources of fissionables, which is why the locals there have nothing in advance of jet aircraft and chemical-explosive weapons, but it was an important planet in the Federation because it produced gadolinium, essential to the Dillingham hyperdrive engine. By inference, this explains why Beowulf has no hyperspace craft; rich in fissionable ores, Beowulf has no gadolinium. Trask begins to see how he can make more out of trade than raiding.

With the equipment brought from Gram by Valkanhayn, the industrialization of Tanith begins. More ships come out from Gram, where the Big Tanith Boom is in full swing. The news of the new Space Viking base begins to trickle through the Old Federation, and independent Space Vikings begin to come in to sell their loot and refit. So do the trading ships of Gilgamesh, a quasi-civilized planet with a theocratic-socialistic government, whose people carry on a huckstering trade in the Old Federation and are highly unpopular everywhere.

It is a Gilgamesher which brings the first news of Andray Dunnan; a year before, the Enterprise *raided Chermosh. Trask chalks up the particulars and date and waits. Another ship reports that Dunnan was on Jagannath, a Space Viking planet, selling loot, including some that must have been gotten on Chermosh, and buying munitions and also hydroponic, carniculture and air-and-water recycling equipment. This would indicate that he is based on some planet inhabitable only in artificial environment. There are only about two million such planets in the Old Federation.*

*Dunnan is building a fleet, it seems; he has been joined by other Space Vikings—*Starhopper, *Captain Vaghn;* Yo-Yo, *Captain Humfort;* Bolide; Eclipse. *And by a chicken-thief named Burrik, commanding the* Fortuna, *and a trader, Horris Sasstroff, who miscalls himself, and also his ship,* Honest Horris. *This last provokes considerable mirth among the Tanith Space Vikings.*

Trask is worried. There was a time when he had hoped that Dunnan would attack Tanith. Now he can only think of the damage that will be done; his interest in finding Dunnan and killing him has been lost in the work he is doing to build a civilization on Tanith. He has made peace with both Beowulf and Amaterasu and is trading with

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both, and now both are building hyperships of their own. There are schools on Tanith, and something very like a college at the principal city, and the people, whom he found on the oxcart and matchlock musket level, are learning to use power equipment and contragravity. If Dunnan attacks now, all this could be ruined and Trask's work set back for years. He must find Dunnan's base, smash it, and exterminate Dunnan and his followers, not to avenge a long-ago murder but to safeguard his work on Tanith and his plans for the future.

The news from Gram is no longer good. King Angus is behaving with arrogance, antagonizing the old nobility who helped make him King, and surrounding himself with upstart favorites, among them the newly ennobled Baron Spasso. People are beginning to remember; now, that his mother was Andray Dunnan's grandmother and that her father, the Baron of Blackcliffe, was hopelessly insane in his later life.

Baron Trask of Traskon would have been deeply distressed about all this, but what happens on Gram is of little interest to Prince Trask of Tanith.

Part 3

XVII

■ As might be expected, the Beowulfers finished their hyperships first. They had started with everything but a little know-how which had been quickly learned. Amaterasu had had to begin by creating the industry they needed to create the industry they needed to build a ship. The Beowulf ship—she was named *Viking's Gift*—came in on Tanith five and a half years after the *Nemesis* and the *Space Scourge* had raided Beowulf; her skipper had fought a normal-drive ship in that battle. Beside plutonium and radioactive isotopes, she carried a general cargo of the sort of luxury-goods unique to Beowulf which could always find a market in interstellar trade.

After selling the cargo and depositing the money in the Bank of Tanith, the skipper of the *Viking's Gift* wanted to know where he could find a good planet to raid. They gave him a list, none too tough but all slightly above the chicken-stealing level, and another list of planets he was *not* to raid; planets with which Tanith was trading.

Six months later they learned that he had showed up on Khepera, with which they were now trading, and had flooded the market there with plundered textiles, hardware, ceramics and plastics. He had bought kregg-meat and hides.

"You see what you did, now?" Harkaman clamored. "You thought you were making a customer; what you made was a competitor."

"What I made was an ally. If we ever do find Dunnan's planet, we'll need a fleet to take it. A couple of Beowulf ships would help. You know them; you fought them, too."

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Harkaman had other worries. While cruising in *Corisande II*, he had come in on Vitharr, one of the planets where Tanith ships traded, to find it being raided by a Space Viking ship based on Xochitl. He had fought a short but furious ship-action, battering the invader until he was glad to hyper out. Then he had gone directly to Xochitl, arriving on the heels of the ship he had beaten, and had had it out both with the captain and Prince Viktor, serving them with an ultimatum to leave Tanith trade planets alone in the future.

"How did they take it?" Trask asked, when he returned to report.

"Just about the way you would have. Viktor said his people were Space Vikings, not Gilgameshers. I told him we weren't Gilgameshers, either, as he'd find out on Xochitl the next time one of his ships raided one of our planets. Are you going to back me up? Of course, you can always send Prince Viktor my head, and an apology—"

"If I have to send him anything, I'll send him a sky full of ships and a planet full of hellburners. You did perfectly right, Otto; exactly what I'd have done in your place."

There the matter rested. There were no more raids by Xochitl ships on any of their trade-planets. No mention of the incident was made in any of the reports sent back to Gram. The Gram situation was deteriorating rapidly enough. Finally, there was an audiovisual message from Angus himself; he was seated on his throne, wearing his crown, and he began speaking from the screen abruptly:

"We, Angus, King of Gram and Tanith, are highly displeased with our subject, Lucas, Prince and Viceroy of Tanith; we consider ourselves very badly served by Prince Trask. We therefore command him to return to Gram, and render to us account of his administration of our colony and realm of Tanith."

After some hasty preparations, Trask recorded a reply. He was sitting on a throne, himself, and he wore a crown just as ornate as King Angus', and robes of white and black Imhotep furs.

"We, Lucas, Prince of Tanith," he began, "are quite willing to acknowledge the suzerainty of the King of Gram, formerly Duke of Wardshaven. It is our earnest desire, if possible, to remain at peace and friendship with the King of Gram, and to carry on trade relations with him and with his subjects.

"We must, however, reject absolutely any efforts on his part to dictate the internal policies of our realm of Tanith. It is our earnest hope,"—dammit, he'd said "earnest," he should have thought of some other word—"that no act on the part of his Majesty the King of Gram will create any breach in the friendship existing between his realm and ours."

Three months later, the next ship, which had left Gram while King

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Angus' summons was still in hyperspace, brought Baron Rathmore. Shaking hands with him as he left the landing craft, Trask wanted to know if he'd been sent out as the new Viceroy. Rathmore started to laugh and ended by cursing vilely.

"No. I've come out to offer my sword to the King of Tanith," he said.

"Prince of Tanith, for the time being," Trask corrected. "The sword, however, is most acceptable. I take it you've had all of our blessed sovereign you can stomach?"

"Lucas, you have enough ships and men here to take Gram," Rathmore said. "Proclaim yourself King of Tanith and then lay claim to the throne of Gram and the whole planet would rise for you."

Rathmore had lowered his voice, but even so the open landing stage was no place for this sort of talk. He said so, ordered a couple of the locals to collect Rathmore's luggage, and got him into a hall-car, taking him down to his living quarters. After they were in private, Rathmore began again:

"It's more than anybody can stand! There isn't one of the old great nobility he hasn't alienated, or one of the minor barons, the landholders and industrialists, the people who were always the backbone of Gram. And it goes from them down to the commonfolk. Assessments on the lords, taxes on the people, inflation to meet the taxes, high prices, debased coinage. Everybody's being beggared except this rabble of new lords he has around him, and that slut of a wife and her greedy kinfolk . . ."

Trask stiffened. "You're not speaking of Queen Flavia, are you?" he asked softly.

Rathmore's mouth opened slightly. "Great Satan, don't you know? No, of course not; the news would have come on the same ship I did. Why, Angus divorced Flavia. He claimed that she was incapable of giving him an heir to the throne. He remarried immediately."

The girl's name meant nothing to Trask; he did know of her father, a Baron Valdiva. He was lord of a small estate south of the Ward lands and west of Newhaven. Most of his people were out-and-out bandits and cattle-rustlers, and he was as close to being one himself as he could get.

"Nice family he's married into. A credit to the dignity of the throne."

"Yes. You wouldn't know this Lady-Demoiselle Evita; she was only seventeen when you left Gram, and hadn't begun to acquire a reputation outside her father's lands. She's made up for lost time since, though. And she has enough uncles and aunts and cousins and ex-lovers and what-not to fill out an infantry regiment, and every one of them's at court with both hands out to grab everything they can."

"How does Duke Joris like this?" The Duke of Bigglersport was Queen Flavia's brother. "I daresay he's less than delighted."

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"He's hiring mercenaries, is what he's doing, and buying combat contragravity. Lucas, why don't you come back? You have no idea what a reputation you have on Gram, now. Everybody would rally to you."

He shook his head, "I have a throne, here on Tanith. On Gram I want nothing. I'm sorry for the way Angus turned out, I thought he'd make a good King. But since he's made an intolerable King, the lords and people of Gram will have to get rid of him for themselves. I have my own tasks, here."

Rathmore shrugged. "I was afraid that would be it," he said. "Well, I offered my sword; I won't take it back. I can help you in what you're doing on Tanith."

The captain of the free Space Viking *Damnthing* was named Roger-fan-Morvill Esthersan, which meant that he was some Sword-Worlder's acknowledged bastard by a woman of one of the Old Federation planets. His mother's people could have been Nergalers; he had coarse black hair, a mahogany-brown skin, and red-brown, almost maroon, eyes. He tasted the wine the robot poured for him and expressed appreciation, then began unwrapping the parcel he had brought in.

"Something I found while raiding on Tetragrammaton," he said. "I thought you might like to have it. It was made on Gram."

It was an automatic pistol, with a belt and holster. The leather was bisonoid-hide; the buckle of the belt was an oval enameled with a crescent, pale blue on black. The pistol was a plain 10-mm military model with grooved plastic grips on the receiver it bore the stamp of the House of Hoylbar, the firearms manufacturers of Glaspyth. Evidently it was one of the arms Duke Omfray had provided for Andray Dunnan's original mercenary company.

"Tetragrammaton?" He glanced over to the Big Board; there was no previous report from that planet. "How long ago?"

"I'd say about three hundred hours. I came from there directly, less than two hundred and fifty hours. Dunnan's ships had left the planet three days before I got there."

That was practically sizzling hot. Well, something like that had to happen, sooner or later. The Space Viking was asking him if he knew what sort of a place Tetragrammaton was.

Neobarbarian, trying to recivilize in a crude way. Small population, concentrated on one continent; farming and fisheries. A little heavy industry, in a small way, at a couple of towns. They had some nuclear power, introduced a century or so ago by traders from Marduk, one of the really civilized planets. They still depended on Marduk for fissionables; their export product was an abominably-smelling vegetable

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oil which furnished the base for delicate perfumes, and which nobody was ever able to synthesize properly.

"I heard they had steel mills in operation, now," the half-breed Space Viking said. "It seems that somebody on Rimmon has just reinvented the railroad, and they need more steel than they can produce for themselves. I thought I'd raid Tetragrammaton for steel and trade it on Rimmon for a load of heaven-tea. When I got there, though, the whole planet was in a mess; not raiding, but plain wanton destruction. The locals were just digging themselves out of it when I landed. Some of them, who didn't think they had anything at all left to lose, gave me a fight. I captured a few of them, to find out what had happened. One of them had that pistol; he said he'd taken it off a Space Viking he'd killed. The ships that raided them were the *Enterprise* and the *Yo-Yo*. I knew you'd want to hear about it. I got some of the locals' stories on tape."

"Well, thank you. I'll want to hear those tapes. Now, you say you want steel?"

"Well, I haven't any money. That's why I was going to raid Tetragrammaton."

"Nifflheim with the money; your cargo's paid for already. This," he said, touching the pistol, "and whatever's on the tapes."

They played off the tapes that evening. They weren't particularly informative. The locals who had been interrogated hadn't been in actual contact with Dunnan's people except in combat. The man who had been carrying the 10-mm Hoylbar was the best witness of the lot, and he knew little. He had caught one of them alone, shot him from behind with a shotgun, taken his pistol, and then gotten away as quickly as he could. They had sent down landing craft, it seemed, and said they wanted to trade; then something must have happened, nobody knew what, and they had begun a massacre and sacked the town. After returning to their ships, they had opened fire with nuclear missiles.

"Sounds like Dunnan," Hugh Rathmore said in disgust. "He just went kill-crazy. The bad blood of Blackcliffe."

"There are funny things about this," Boake Valkanhayn said. "I'd say it was a terror-raid, but who in Gehenna was he trying to terrorize?"

"I wondered about that, too." Harkaman frowned. "This town where he landed seems, such as it was, to have been the planetary capital. They just landed, pretending friendship, which I can't see why they needed to pretend, and then began looting and massacring. There wasn't anything of real value there; all they took was what the men could carry themselves or stuff into their landing craft, and they did that because they have what amounts to a religious taboo against

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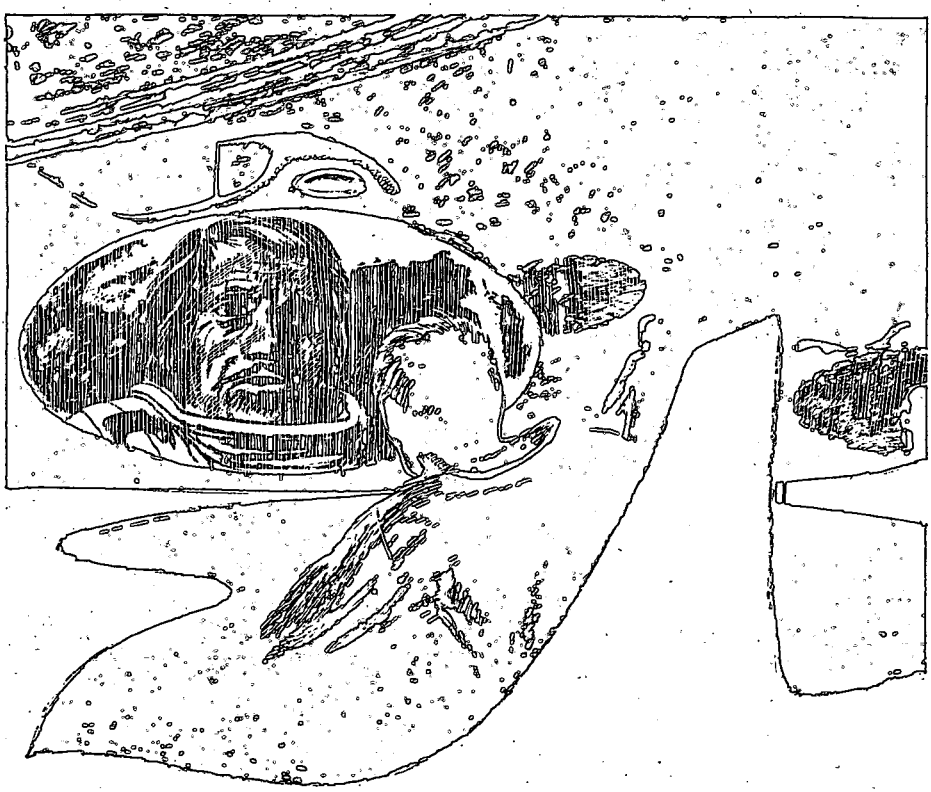

landing anywhere and leaving without stealing something. The real loot was at these two other towns; a steel mill and big stocks of steel at one, and all that skunk-apple oil at the other. So what did they do? They dropped a five-megaton bomb on each one, and blew both of them to Em-See-Square. That was a terror-raid pure and simple, but as Boake inquires, just who were they terrorizing? If there were big cities somewhere else on the planet, it would figure. But there aren't. They blew out the two biggest cities, and all the loot in them."

"Then they wanted to terrorize somebody off the planet."

"But nobody'd hear about it off-planet," somebody protested.

"The Mardukans would; they trade with Tetragrammaton," the acknowledged bastard of somebody named Morvill said. "They have a couple of ships a year there."

"That's right," Trask agreed. "Marduk."

"You mean, you think Dunnan's

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trying to terrorize *Marduk?*" Valkanhayn demanded. "Great Satan, he isn't even crazy enough for that!"

Baron Rathmore started to say something about what Andray Dunnan was crazy enough to do, and what his uncle was crazy enough to do. It was just one of the cracks he had been making since he'd come to Tanith and didn't have to look over his shoulder while he was making them.

"I think he is, too," Trask said. "I think that is exactly what he is doing. Don't ask me why; as Otto is fond of remarking, he's crazy and we aren't, and that gives him an advantage. But what have we gotten, since those Gilgameshers told us about his picking up Burrik's ship and the *Honest Horris?* Until today, we've heard nothing from any other Space Viking. What we have gotten was stories from Gilgameshers about raids on planets where they trade, and every one of them is also a planet where Marduk ships trade. And in every case, there has been little or nothing reported about valuable loot taken. The stories are all about wanton and murderous bombings. I think Andray Dunnan is making war on Marduk."

"Then he's crazier than his grandfather and his uncle both!" Rathmore cried.

"You mean, he's making a string of terror-raids on their trade planets, hoping to pull the Mardukan space-navy away from the home planet?" Harkaman had stopped being incredulous. "And when he gets them all lured away, he'll make a fast raid?"

"That's what I think. Remember our fundamental postulate: Dunnan is crazy. Remember how he convinced himself that he was the rightful heir to the ducal crown of Wardshaven?" And remember his insane passion for Elaine; he pushed that thought hastily from him. "Now, he's convinced that he's the greatest Space Viking in history. He has to do something worthy of that distinction. When was the last time anybody attacked a civilized planet? I don't mean Gilgamesh, I mean a planet like Marduk."

"A hundred and twenty years ago; Prince Havilgar of Haulteclere, six ships, against Aton. Two ships got back. He didn't. Nobody's tried it since," Harkaman said.

"So Dunnan the Great will do it. I hope he tries," he surprised himself by adding. "That's provided I find out what happened. Then I could stop thinking about him."

There was a time when he had dreaded the possibility that somebody else might kill Dunnan before he could.

XVIII

Seshat, Obidicut, Lugaluru, Audhumla.

The young man elevated by his father's death in the Dunnan raid to the post of hereditary President

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of the democratic Republic of Tetragrammaton had been sure that the Marduk ships which came to his planet traded also on those. There had been some difficulty about making contact, and the first face-to-face meeting had begun in an atmosphere of bitter distrust on his part. They had met out of doors; around them, spread wrecked and burned buildings, and hastily constructed huts and shelters, and wide spaces of charred and slagged rubble.

"They blew up the steel mill here, and the oil-refinery at Jannsboro. They bombed and strafed the little farm-towns and villages. They scattered radioactives that killed as many as the bombing. And after they had gone away, this other ship came."

"The *Damnthing?* She bore the head of a beast with three very big horns?"

"That's the one. They did a little damage, at first. When the captain found out what had happened to us, he left some food and medicines for us." Roger-fan-Morvill Esthersan hadn't mentioned that.

"Well, we'd like to help you, if we can. Do you have nuclear power? We can give you a little equipment. Just remember it of us, when you're back on your feet; we'll be back to trade later. But don't think you owe us anything. The man who did this to you is my enemy. Now, I want to talk to every one of your people who can tell me anything at all . . ."

Seshat was the closest; they went there first. They were too late. Seshat had had it already, and on the evidence of the radioactivity counters, not too long ago. Four hundred hours at most. There had been two hellburners; the cities on which they had fallen were still-smoking pits literally burned into the ground and the bedrock below, at the center of five hundred mile radii of slag and lava and scorched earth and burned forests. There had been a planetbuster; it had started a major earthquake. And half a dozen thermonuclears. There were probably quite a few survivors—a human planetary population is extremely hard to exterminate completely—but within a century they'd be back to the loincloth and the stone hatchet.

"We don't even know Dunnan did it, personally," Paytrik Morland said. "For all we know, he's down in an air-tight cave city on some planet nobody ever heard of, sitting on a golden throne, surrounded by a harem."

He had begun to suspect that Dunnan was doing something of just the sort. The Greatest Space Viking of History would naturally found a Space Viking empire.

"An emperor goes out to look his empire over, now and then; I don't spend all my time on Tanith. Say we try Audhumla next. It's the farthest away. We might get there while he's still shooting up Obidicut and Lugaluru. Guatt, figure us a jump for it."

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When the colored turbulence washed away and the screen cleared, Audhumla looked like Tanith or Khepera or Amaterasu or any other Terra-type planet, a big disk brilliant with reflected sunlight and glowing with starlit and moonlit atmosphere on the other. There was a single rather large moon, and, in the telescopic screen, the usual markings of seas and continents and rivers and mountain-ranges. But there was nothing to show . . .

Oh, yes; lights on the darkened side, and from the size they must be vast cities. All the available data for Audhumla was long out of date; a considerable civilization must have developed in the last half dozen centuries.

Another light appeared, a hard blue-white spark that spread into a larger, less brilliant yellow light. At the same time, all the alarm-devices in the command-room went into a pandemonium of jangling and flashing and squawking and howling and shouting. Radiation. Energy-release. Contragravity distortion effects. Infra-red output. A welter of indecipherable radio and communication-screen signals. Radar and scanner-ray beams from the planet.

Trask's fist began hurting; he found that he had been pounding the desk in front of him with it. He stopped it.

"We caught him, we caught him!" he was yelling hoarsely. "Full speed in, continuous acceleration, as much as we can stand. We'll worry about decelerating when we're in shooting distance."

The planet grew steadily larger; Karffard was taking him at his word about continuous acceleration. There'd be a Gehenna of a bill to pay when they started decelerating. On the planet, more bombs were going off just outside atmosphere beyond the sunset line.

"Ship observed. Altitude about a hundred to five hundred miles—hundreds, not thousands—35° North Latitude, 15° west of the sunset line. Ship is under fire, bomb explosions near her," a voice whooped.

Somebody else was yelling that the city lights were really burning cities, or burning forests. The first voice, having stopped, broke in again:

"Ship is visible in telescopic screen, just at the sunset line. And there's another ship detected but not visible, somewhere around the equator, and a third one somewhere out of sight, we can just get the fringe of her contragravity field around the planet."

That meant there were two sides, and a fight. Unless Dunnan had picked up a third ship, somewhere. The telescopic view shifted; for a moment the planet was completely off-screen, and then its curvature came into the screen against a star-scattered background. They were almost in to two thousand miles now; Karffard was yelling to stop acceleration and trying to put the ship into a spiral orbit. Suddenly

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they caught a glimpse of one of the ships.

"She's in trouble." That was Paul Koreff's voice. "She's leaking air and water vapor like crazy."

"Well, is she a good guy or a bad guy?" Morland was yelling back, as though Koreff's spectroscopes could distinguish. Koreff ignored that.

"Another ship making signal," he said. "She's the one coming up over the equator. Sword-World impulse code; her communication-screen combination, and an identify-yourself."

Karffard punched out the combination as Koreff furnished it. While Trask was desperately willing his face into immobility, the screen lighted. It wasn't Andray Dunnan; that was a disappointment. It was almost as good, though. His henchman, Sir Nevil Ormm.

"Well, Sir Nevil! A pleasant surprise," he heard himself saying. "We last met on the terrace at Karvall House, did we not?"

For once, the paper-white face of Andray Dunnan's *âme damnée* showed expression, but whether it was fear, surprise, shock, hatred, anger, or what combination of them, Trask could no more than guess.

"Trask! Satan curse you . . .!"

Then the screen went blank. In the telescopic screen, the other ship came on unfalteringly. Paul Koreff, who had gotten more data on mass, engine energy-output and dimensions, was identifying her as the *Enterprise*.

"Well, go for her! Give her everything!"

They didn't need the order; Vann Larch was speaking rapidly into his hand-phone, and Alvyn Karffard was hurling his voice all over the *Nemesis*, warning of sudden deceleration and direction change, and while he was speaking, things in the command room began sliding. In the telescopic screen, the other ship was plainly visible; he could see the oval patch of black with the blue crescent, and in his screen Dunnan would be seeing the sword-impaled skull of the *Nemesis*.

If only he could be sure Dunnan was there to see it. If it had only been Dunnan's face, instead of Ormm's, that he had seen in the screen. As it was, he couldn't be sure, and if one of the missiles that were already going out made a lucky hit, he might never be sure. He didn't care who killed Dunnan, or how. All he wanted was to know that Dunnan's death had set him free from a self-assumed obligation that was now meaningless to him.

The *Enterprise* launched countermissiles; so did the *Nemesis*. There were momentarily unbearable flashes of pure energy and from them globes of incandescence spread and vanished. Something must have gotten through; red lights flashed on the damage board. It had been

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something heavy enough even to jolt the huge mass of the *Nemesis*. At the same time, the other ship took a hit from something that would have vaporized her had she not been armored in collapsium. Then, as they passed close together, guns hammered back and forth along with missiles, and then the *Enterprise* was out of sight around the horizon.

Another ship, the size of Otto Harkaman's *Corisande II*, was approaching; she bore a tapering, red-nailed feminine hand dangling a planet by a string. They rushed toward each other, planting a garden of evanescent fire-flowers between them; they pounded one another with guns, and then they sped apart. At the same time, Paul Koreff was picking up an impulse-code signal from the third, crippled, ship; a screen combination. Trask punched it out as he received it.

A man in space armor was looking out of the screen. That was bad, if they had to suit up in the command room. They still had air; his helmet was off, but it was attached and hinged back. On his breastplate was a device of a dragonlike beast perched with its tail around a planet, and a crown above. He had a thin, high-cheeked face, with a vertical wrinkle between his eyes, and a clipped blond mustache.

"Who are you, stranger. You're fighting my enemies; does that make you a friend."

"I'm a friend of anybody who owns Andray Dunnan his enemy. Sword-World ship *Nemesis;* I'm Prince Lucas Trask of Tanith, commanding."

"Royal Mardukan ship *Victrix*." The thin-faced man gave a wry laugh. "Not been living up to her name so well. I'm Prince Simon Bentrik, commanding."

"Are you still battle-worthy?"

"We can fire about half our guns; we still have a few missiles left. Seventy per cent of the ship's sealed off, and we've been holed in a dozen places. We have power enough for lift and some steering-way. We can't make lateral way except at the expense of lift."

Which made the *Victrix* practically a stationary target. He yelled over his shoulder at Karffard to cut speed all he could without tearing things apart.

"When that cripple comes into view, start circling around her. Get into a tight circle above her." He turned back to the man in the screen. "If we can get ourselves slowed down enough, we'll do all we can to cover you."

"All you can is all you can; thank you, Prince Trask."

"Here comes the *Enterprise!*" Karffard shouted, with obscenely blasphemous embellishments. "She hairpinned on us."

"Well, do something about her!"

Vann Larch was already doing it. The *Enterprise* had taken damage in the last exchange; Koreff's spectroscopes showed her halo-ed with air and water vapor. Her instruments

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would be getting the same story from the *Nemesis;* wedge-shaped segments extending six to eight decks in were sealed off in several places. Then the only thing that could be seen with certainty was the blaze of mutually destroying missiles between. The short-range gun duel began and ended as they passed.

In the screen, he had seen a fat round-nosed thing come up from the *Victrix*, curving far out ahead of the passing *Enterprise*. She was almost out of sight around the planet when she ran head-on into it, and vanished in an awesome blaze. For a moment, he thought she had been destroyed, then she lurched into sight and went around the curvature of Audhumla.

Trask and the Mardukan were shaking hands with themselves at each other in their screens; everybody in the *Nemesis* command room was screaming: "Well shot, *Victrix!* Well shot!"

Then the *Yo-Yo* was coming around again, and Vann Larch was saying, "Gehenna with this fooling around! I'll fix the expurgated unprintability!"

He yelled orders—a jumble of code letters and numbers—and things began going out. Most of them blew up in space. Then the *Yo-Yo* blew up, very quietly, as things do where there is no air to carry shock- and sound-waves, but very brilliantly. There was brief daylight all over the night side of the planet.

"That was our planet-buster," Larch said. "I don't know what we'll use on Dunnan."

"I didn't know we had one," Trask admitted.

"Otto had a couple built on Beowulf. The Beowulfers are good nuclear weaponeers."

The *Enterprise* came back, hastily, to see what had blown up. Larch put off another entertainment of small stuff, with a fifty megaton thermonuclear, viewscreen-piloted, among them. It had its own arsenal of small missiles, and it got through. In the telescopic screen, a jagged hole was visible just below the equator of the *Enterprise*, the edges curling outward. Something, possibly a heavy missile in an open tube, ready for launching, had gone off inside her. What the inside of the ship was like, or how many of her company were still alive, was hard to guess.

There were some, and her launchers were still spewing out missiles. They were intercepted and blew up. The hull of the *Enterprise* bulked huge in the guidance-screen of the missile and filled it; the jagged crater that had obliterated the bottom of Dunnan's blue crescent blazon spread to fill the whole screen. The screen went milky white as the pickup went off.

All the other screens blazed briefly, until their filters went on. Even afterward, they glared like the cloud-veiled sun of Gram at high noon. Finally, when the light-intensity had dropped and the filters

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went off, there was nothing left of the *Enterprise* but an orange haze.

Somebody—Paytrik, Baron Morland, he saw—was pounding him on the back and screaming inarticulately in his ear. A dozen space-armored officers with planet-perched dragons on their breasts were crowding beside Prince Bentrik in the screen from the *Victrix*, whooping like drunken bisonoid-herders on payday night.

"I wonder," he said, almost inaudibly, "if I'll ever know if Andray Dunnan was on that ship."

XVIX

Prince Trask of Tanith and Prince Simon Bentrik were dining together on an upper terrace of what had originally been the mansion house of a Federation period plantation. It had been a number of other things since; now it was the municipal building of a town that had grown around it, which had, somehow, escaped undamaged from the Dunnan blitz. Normally about five or ten thousand, the place was now jammed with almost fifty thousand homeless refugees from half a dozen other towns that had been destroyed, overflowing the buildings and crowding into a sprawling camp of hastily built huts and shelters, and already permanent buildings were going up to accommodate them. Everybody, locals, Mardukans and Space Vikings, had been busy with the work of relief and reconstruction; this was the first meal the two commanders had been able to share in any leisure at all. Prince Bentrik's enjoyment of it was somewhat impaired by the fact that from where he sat he could see, in the distance, the sphere of his disabled ship.

"I doubt we can get her off-planet again, let alone into hyperspace."

"Well, we'll get you and your crew to Marduk in the *Nemesis*, then." They were both speaking loudly, above the clank and clatter of machinery below. "I hope you didn't think I'd leave you stranded here."

"I don't know how either of us will be received. Space Vikings haven't been exactly popular on Marduk, lately. They may thank you for bringing me back to stand trial," Bentrik said bitterly. "Why, I'd have anybody shot who let his ship get caught as I did mine. Those two were down in atmosphere before I knew they'd come out of hyperspace."

"I think they were down on the planet before your ship arrived."

"Oh, that's ridiculous, Prince Trask!" the Mardukan cried. "You can't hide a ship on a planet. Not from the kind of instruments we have in the Royal Navy."

"We have pretty fair detection ourselves," Trask reminded him. "There's one place where you can do it. At the bottom of an ocean, with a thousand or so feet of water over her. That's where I was going to hide the *Nemesis*, if I got here ahead of Dunnan."

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Prince Bentrik's fork stopped half way to his mouth. He lowered it slowly to his plate. That was a theory he'd like to accept, if he could.

"But the locals. They didn't know about it."

"They wouldn't. They have no off-planet detection of their own. Come in directly over the ocean, out of the sun, and nobody'd see the ship."

"Is that a regular Space Viking trick?"

"No. I invented it myself, on the way from Seshat. But if Dunnan wanted to ambush your ship, he'd have thought of it, too. It's the only practical way to do it."

Dunnan, or Nevil Ormm; he wished he knew, and was afraid he would go on wishing all his life.

Bentrik started to pick up his fork again, changed his mind, and sipped from his wineglass instead.

"You may find you're quite welcome on Marduk, at that," he said. "These raids have only been a serious problem in the last four years. I believe, as you do, that this enemy of yours is responsible for all of them. We have half the Royal Navy out now, patrolling our trade-planets. Even if he wasn't aboard the *Enterprise* when you blew her up, you've put a name on him and can tell us a good deal about him." He set down the wineglass. "Why, if it weren't so utterly ridiculous, one might even think he was making war on Marduk."

From Trask's viewpoint, it wasn't ridiculous at all. He merely mentioned that Andray Dunnan was psychotic and let it go at that.

The *Victrix* was not completely unrepairable, although quite beyond the resources at hand. A fully equipped engineer-ship from Marduk could patch her hull and replace her Dillinghams and her Abbot lift-and-drive engines and make her temporarily spaceworthy, until she could be gotten to a shipyard. They concentrated on repairing the *Nemesis*, and in another two weeks she was ready for the voyage.

The six hundred hour trip to Marduk passed pleasantly enough. The Mardukan officers were good company, and found their Space Viking opposite numbers equally so. The two crews had become used to working together on Audhumla, and mingled amicably off watch, interesting themselves in each other's hobbies and listening avidly to tales of each other's home planets. The Space Vikings were surprised and disappointed at the somewhat lower intellectual level of the Mardukans. They couldn't understand that; Marduk was supposed to be a civilized planet, wasn't it? The Mardukans were just as surprised, and inclined to be resentful, that the Space Vikings all acted and talked like officers. Hearing of it, Prince Bentrik was also puzzled. Fo'c'sle hands on a Mardukan ship belonged definitely to the lower orders.

"There's still too much free land

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and free opportunity on the Sword-Worlds," Trask explained. "Nobody does much bowing and scraping to the class above him; he's too busy trying to shove himself up into it. And the men who ship out as Space Vikings are the least class-conscious of the lot. Think my men may have trouble on Marduk about that? They'll all insist on doing their drinking in the swankiest places in town."

The Mardukans talked a lot about democracy. They thought well of it; their government was a representative democracy. It was also a hereditary monarchy, if that made any kind of sense. Trask's efforts to explain the political and social structure of the Sword-Worlds met the same incomprehension from Bentrik.

"Why, it sounds like feudalism to me!"

"No. I don't think so. Everybody will be so amazed that Space Vikings aren't twelve feet tall, with three horns like a Zarathustra damnthing and a spiked tail like a Fafnir mantichore that they won't even notice anything less. Might do some good, in the long run. Crown Prince Edvard will like your Space Vikings. He's much opposed to class distinctions and caste prejudices. Says they have to be eliminated before we can make democracy really work."

"That's right; that's what it is. A king owes his position to the support of his great nobles; they owe theirs to their barons and land-holding knights; they owe theirs to their people. There are limits beyond which none of them can go; after that, their vassals turn on them."

"Well, suppose the people of some barony rebel? Won't the king send troops to support the baron?"

"What troops? Outside a personal guard and enough men to

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police the royal city and hold the crown lands, the king has no troops. If he wants troops, he has to get them from his great nobles; they have to get them from their vassal barons, who raise them by calling out their people." That was another source of dissatisfaction with King Angus of Gram; he had been augmenting his forces by hiring off-planet mercenaries. "And the people won't help some other baron oppress his people; it might be their turn next."

"You mean, the people are armed?" Prince Bentrik was incredulous.

"Great Satan, aren't yours?" Prince Trask was equally surprised. "Then your democracy's a farce, and the people are only free on sufferance. If their ballots aren't secured by arms, they're worthless. Who has the arms on your planet?"

"Why, the Government."

"You mean the King?"

Prince Bentrik was shocked. Certainly not; horrid idea. That would be . . . why, it would be *despotism!* Besides, the King wasn't the Government, at all; the Government ruled in the King's name. There was the Assembly; the Chamber of Representatives, and the Chamber of Delegates. The people elected the Representatives, and the Representatives elected the Delegates, and the Delegates elected the Chancellor. Then, there was the Prime Minister; he was appointed by the King, but the King had to appoint him from the party holding the most seats in the Chamber of Representatives, and he appointed the Ministers, who handled the executive work of the Government, only their subordinates in the different Ministries were career-officials who were selected by competitive examination for the bottom jobs and promoted up the bureaucratic ladder from there.

This left Trask wondering if the Mardukan constitution, hadn't been devised by Goldberg, the legendary Old Terran inventor who always did everything the hard way. It also left him wondering just how in Gehenna the Government of Marduk ever got anything done.

Maybe it didn't. Maybe that was what saved Marduk from having a real despotism.

"Well, what prevents the Government from enslaving the people? The people can't; you just told me that they aren't armed, and the Government is."

He continued, pausing now and then for breath, to catalogue every tyranny he had ever heard of, from those practiced by the Terran Federation before the Big War to those practiced at Eglonsby on Amaterasu by Pedrosan Pedro. A few of the very mildest were pushing the nobles and people of Gram to revolt against Angus I.

"And in the end," he finished, "the Government would be the only property owner and the only employer on the planet, and every-

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body else would be slaves, working at assigned tasks, wearing Government-issued clothing and eating Government food, their children educated as the Government prescribes and trained for jobs selected for them by the Government, never reading a book or seeing a play or thinking a thought that the Government had not approved . . ."

Most of the Mardukans were laughing, now. Some of them were accusing him of being just too utterly ridiculous.

"Why, the people *are* the Government. The people would not legislate themselves into slavery."

He wished Otto Harkaman were there. All he knew of history was the little he had gotten from reading some of Harkaman's books, and the long, rambling conversations aboard ship in hyperspace or in the evenings at Rivington. But Harkaman, he was sure, could have furnished hundreds of instances, on scores of planets and over ten centuries of time, in which people had done exactly that and hadn't known what they were doing, even after it was too late.

"They have something about like that on Aton," one of the Mardukan officers said.

"Oh, Aton; that's a dictatorship, pure and simple. That Planetary Nationalist gang got into control fifty years ago, during the crisis after the war with Baldur . . ."

"They were voted into power by the people, weren't they?"

"Yes; they were," Prince Bentrik said gravely. "It was an emergency measure, and they were given emergency powers. Once they were in, they made the emergency permanent."

"That couldn't happen on Marduk!" a young nobleman declared.

"It could if Zaspar Makann's party wins control of the Assembly at the next election," somebody else said.

"Oh, then Marduk's safe! The sun'll go nova first," one of the junior Royal Navy officers said.

After that, they began talking about women, a subject any spaceman will drop any other subject to discuss.

Trask made a mental note of the name of Zaspar Makann, and took occasion to bring it up in conversation with his shipboard guests. Every time he talked about Makann to two or more Mardukans, he heard at least three or more opinions about the man. He was a political demagogue; on that everybody agreed. After that, opinions diverged.

Makann was a raving lunatic, and all the followers he had were a handful of lunatics like him. He might be a lunatic, but he had a dangerously large following. Well, not so large; maybe they'd pick up a seat or so in the Assembly, but that was doubtful—not enough of them in any representative district to elect an Assemblyman. He was just a smart crook, milking a lot of half-witted plebeians for all he

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could get out of them. Not just plebes, either; a lot of industrialists were secretly financing him, in hope that he would help them break up the labor unions. You're nuts; everybody knew the labor unions were backing him, hoping he'd scare the employers into granting concessions. You're both nuts; he was backed by the mercantile interests; they were hoping he'd run the Gilgameshers off the planet.

Well, that was one thing you had to give him credit for. He wanted to run out the Gilgameshers. Everybody was in favor of that.

Now, Trask could remember something he'd gotten from Harkaman. There had been Hitler, back at the end of the First Century Pre-Atomic; hadn't he gotten into power because everybody was in favor of running out the Christians, or the Moslems, or the Albigensians, or somebody?

XX

Marduk had three moons; a big one, fifteen hundred miles in diameter, and two insignificant twenty-mile chunks of rock. The big one was fortified, and a couple of ships were in orbit around it. The *Nemesis* was challenged as she emerged from her last hyperjump; both ships broke orbit and came out to meet her, and several more were detected lifting away from the planet.

Prince Bentrik took the communication screen, and immediately encountered difficulties. The commandant, even after the situation had been explained twice to him, couldn't understand. A Royal Navy fleet unit knocked out in a battle with Space Vikings was bad enough, but being rescued and brought to Marduk by another Space Viking simply didn't make sense. He then screened the Royal Palace at Malverton, on the planet; first he was icily polite to somebody several echelons below him in the peerage, and then respectfully polite to somebody he addressed as Prince Vandarvant. Finally, after some minutes' wait, a frail, white-haired man in a little black cap-of-maintenance appeared in the screen. Prince Bentrik instantly sprang to his feet. So did all the other Mardukans in the command room.

"Your Majesty! I am most deeply honored!"

"Are you all right, Simon?" the old gentleman asked solicitously. "They haven't done anything to you, have they?"

"Saved my life, and my men's, and treated me like a friend and a comrade, Your Majesty. Have I your permission to present, informally, their commander, Prince Trask of Tanith?"

"Indeed you may, Simon. I owe the gentleman my deepest thanks."

"His Majesty, Mikhyl the Eighth, Planetary King of Marduk," Prince Bentrik said. "His Highness, Lucas, Prince Trask, Planetary Viceroy of Tanith for his Majesty Angus the First of Gram."

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The elderly monarch bowed his head slightly; Trask bowed a little more deeply, from the waist.

"I am very happy, Prince Trask, first, I confess, at the safe return of my kinsman Prince Bentrik, and then at the honor of meeting one in the confidence of my fellow sovereign King Angus of Gram. I will never be ungrateful for what you did for my cousin and for his officers and men. You must stay at the Palace while you are on this planet; I am giving orders for your reception, and I wish you to be formally presented to me this evening." He hesistated briefly. "Gram; that is one of the Sword-Worlds, is it not?" Another brief hesitation. "Are you really a Space Viking, Prince Trask?"

Maybe he'd expected Space Vikings to have three horns and a spiked tail and stand twelve feet tall, himself.

It took several hours for the *Nemesis* to get into orbit. Bentrik spent most of them in a screen-booth, and emerged visibly relieved.

"Nobody's going to be sticky about what happened on Audhumla," he told Trask. "There will be a Board of Inquiry. I'm afraid I had to mix you up in that. It's not only about the action on Audhumla; everybody from the Space Minister down wants to hear what you know about this fellow Dunnan. Like yourself, we all hope he went to Em-See-Square along with his flagship, but we can't take it for granted. We have over a dozen trade-planets to protect, and he's hit more than half of them already."

The process of getting into orbit took them around the planet several times, and it was a more impressive spectacle at each circuit. Of course, Marduk had a population of almost two billion, and had been civilized, with no hiatus of Neo-barbarism, since it had first been colonized in the Fourth Century. Even so, the Space Vikings were amazed—and stubbornly refusing to show it—at what they saw in the telescopic screens.

"Look at that city!" Paytrik Morland whispered. "We talk about the civilized planets, but I never realized they were anything like this. Why, this makes Excalibur look like Tanith!"

The city was Malverton, the capital; like any city of a contra-gravity-using people, it lay in a rough circle of buildings towering out of green interspaces, surrounded by the smaller circles of spaceports and industrial suburbs. The difference was that any of these were as large as Camelot on Excalibur or four Wardshavens on Gram, and Malverton itself was almost half the size of the whole barony of Traskon.

"They aren't any more civilized that we are, Paytrik. There are just more of them. If there were two billion people on Gram—which I hope there never will be—Gram

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would have cities like this, too."

One thing; the government of a planet like Marduk would have to be something more elaborate than the loose feudalism of the Sword-Worlds. Maybe this Goldberg-ocracy of theirs had been forced upon them by the sheer complexity of the population and its problems.

Alvyn Karffard took a quick look around him to make sure none of the Mardukans were in earshot.

"I don't care how many people they have," he said. "Marduk can be had. A wolf never cares how many sheep there are in a flock. With twenty ships, we could take this planet like we took Eglonsby. There'd be losses coming in, sure, but after we were in and down, we'd have it."

"Where would we get twenty ships?"

Tanith, at a pinch, could muster five or six, counting the free Space Vikings who used the base facilities; they would have to leave a couple to hold the planet. Beowulf had one, and another almost completed, and now there was an Amaterasu ship. But to assemble a Space Viking armada of twenty . . . He shook his head. The real reason why Space Vikings had never raided a civilized planet successfully had always been their inability to combine under one command in sufficient strength.

Besides, he didn't want to raid Marduk. A raid, if successful, would yield immense treasures, but cause a hundred, even a thousand, times as much destruction, and he didn't want to destroy anything civilized.

The landing stages of the palace were crowded when he and Prince Bentrik landed, and, at a discreet distance, swarms of air-vehicles circled, creating a control problem for the police. Parting from Bentrik, he was escorted to the suite prepared for him; it was luxurious in the extreme but scarcely above Sword-World standards. There were a surprising number of human servants, groveling and fawning and getting underfoot and doing work robots could have been doing better. What robots there were were inefficient, and much work and ingenuity had been lavished on efforts to copy human form to the detriment of function.

After getting rid of most of the superfluous servants, he put on a screen and began sampling the newscasts. There were telescopic views of the *Nemesis* from some craft on orbit nearby, and he watched the officers and men of the *Victrix* being disembarked; there were other views of their landing at some naval installation on the ground, and he could see reporters being chevied away by Navy ground-police. And there was a wide range of commentary opinion.

The Government had already denied that, (1) Prince Bentrik had captured the *Nemesis* and brought her in as a prize, and, (2) the Space Vikings had captured Prince Bentrik and were holding him for

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ransom. Beyond that, the Government was trying to sit on the whole story, and the Opposition was hinting darkly at corrupt deals and sinister plots. Prince Bentrik arrived in the midst of an impassioned tirade against pusillanimous traitors surrounding his Majesty who were betraying Marduk to the Space Vikings.

"Why doesn't your Government publish the facts and put a stop to that nonsense?" Trask asked.

"Oh, let them rave," Bentrik replied. "The longer the Government waits, the more they'll be ridiculed when the facts are published."

Or, the more people will be convinced that the Government had something to hush up, and had to take time to construct a plausible story. He kept the thought to himself. It was their government; how they mismanaged it was their own business. He found that there was no bartending robot; he had to have a human servant bring drinks. He made up his mind to have a few of the *Nemesis* robots sent down to him.

The formal presentation would be in the evening; there would be a dinner first, and because Trask had not yet been formally presented, he couldn't dine with the King, but because he was, or claimed to be, Viceroy of Tanith, he ranked as a chief of state and would dine with the Crown Prince, to whom there would be an informal introduction first.

This took place in a small antechamber off the banquet hall; the Crown Prince and Crown Princess and Princess Bentrik were there when they arrived. The Crown Prince was a man of middle age, graying at the temples, with the glassy stare that betrayed contact lenses. The resemblance between him and his father was apparent; both had the same studious and impractical expression, and might have been professors on the same university faculty. He shook hands with Trask, assuring him of the gratitude of the Court and Royal Family.

"You know, Simon is next in succession, after myself and my little daughter," he said. "That's too close to take chances with him." He turned to Bentrik. "I'm afraid this is your last space adventure, Simon. You'll have to be a spaceport spaceman from now on."

"I shan't be sorry," Princess Bentrik said. "And if anybody owes Prince Trask gratitude, I do." She pressed his hands warmly. "Prince Trask, my son wants to meet you, very badly. He's ten years old, and he thinks Space Vikings are romantic heroes."

"He should be one, for a while."

He should just see a planet Space Vikings had raided.

Most of the people at the upper end of the table were diplomats—ambassadors from Odin and Baldur and Isis and Ishtar and Aton and

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the other civilized worlds. No doubt they hadn't actually expected horns and a spiked tail, or even tattooing and a nose ring, but after all, Space Vikings were just some sort of Neobarbarians, weren't they? On the other hand, they had all seen views and gotten descriptions of the *Nemesis*, and had heard about the ship-action on Audhumla, and this Prince Trask—a Space Viking prince; that sounded civilized enough—had saved a life with only three other lives, one almost at an end, between it and the throne. And they had heard about the screen conversation with King Mikhyl. So they were courteous through the meal, and tried to get as close as possible to him in the procession to the throne room.

King Mikhyl wore a golden crown topped by the planetary emblem, which must have weighed twice as much as a combat helmet, and fur-edged robes that would weigh more than a suit of space armor. They weren't nearly as ornate, though, as the regalia of King Angus I of Gram. He rose to clasp Prince Bentrik's hand, calling him "dear cousin," and congratulating him on his gallant fight and fortunate escape. That knocks any court-martial talk on the head, Trask thought. He remained standing to shake hands with Trask, calling him "valued friend to me and my house." First person singular; that must be causing some lifted eyebrows.

Then the King sat down, and the rest of the roomful filed up onto the dais to be received, and finally it was over and the king rose and proceeded, followed by his immediate suite between the bowing and curtsying court and out the wide doors. After a decent interval, Crown Prince Edward escorted him and Prince Bentrik down the same route, the others falling in behind, and across the hall to the ballroom, where there was soft music and refreshments. It wasn't too unlike a court reception on Excalibur, except that the drinks and canapes were being dispensed by human servants.

He was wondering what sort of court functions Angus the First of Gram was holding by now.

After half an hour, a posse of court functionaries approached and informed him that it had pleased his Majesty to command Prince Trask to attend him in his private chambers. There was an audible gasp at this; both Prince Bentrik and the Crown Prince were trying not to grin too broadly. Evidently this didn't happen too often. He followed the functionaries from the ballroom, and the eyes of everybody else followed him.

Old King Mikhyl received him alone, in a small, comfortably shabby room behind vast ones of incredible splendor. He wore fur-lined slippers and a loose robe with a fur collar, and his little black cap-of-maintenance. He was

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standing when Trask entered; when the guards closed the door and left them alone, he beckoned Trask to a couple of chairs, with a low table, on which were decanters and glasses and cigars, between.

"It's a presumption on royal authority to summon you from the ballroom," he began, after they had seated themselves and filled glasses. "You are quite the cynosure, you know."

"I'm grateful to Your Majesty. It's both comfortable and quiet here, and I can sit down. Your Majesty was the center of attention in the throne room, yet I seemed to detect a look of relief as you left it."

"I try to hide it, as much as possible." The old King took off the little gold-circled cap and hung it on the back of his chair. "Majesty can be rather wearying, you know."

So he could come here and put it off. Trask felt that some gesture should be made on his own part. He unfastened the dress-dagger from his belt and laid it on the table. The King nodded.

"Now, we can be a couple of honest tradesmen, our shops closed for the evening, relaxing over our wine and tobacco," he said. "Eh, Goodman Lucas?"

It seemed like an initiation into a secret society whose ritual he must guess at step by step.

"Rise, Goodman Mikhyl."

They lifted their glasses to each other and drank; Goodman Mikhyl offered cigars, and Goodman Lucas held a light for him.

"I hear a few hard things about your trade, Goodman Lucas."

"All true, and mostly understated. We're professional murderers and robbers, as one of my fellow tradesmen says. The worst of it is that robbery and murder become just that: a trade, like servicing robots or selling groceries."

"Yet you fought two other Space Vikings to cover my cousin's crippled *Victrix*. Why?"

So he must tell his tale, so worn and smooth, again. King Mikhyl's cigar went out while he listened.

"And you have been hunting him ever since? And now, you can't be sure whether you killed him or not?"

"I'm afraid I didn't. The man in the screen is the only man Dunnan can really trust. One or the other would stay wherever he has his base all the time."

"And when you do kill him; what then?"

"I'll go on trying to make a civilized planet of Tanith. Sooner or later, I'll have one quarrel too many with King Angus, and then we will be our Majesty Lucas the First of Tanith, and we will sit on a throne and receive our subjects. And I'll be glad when I can get my crown off and talk to a few men who call me 'shipmate,' instead of 'Your Majesty.'"

"Well, it would violate professional ethics for me to advise a

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subject to renounce his sovereign, of course, but that might be an excellent thing. You met the ambassador from Ithavoll at dinner, did you not? Three centuries ago, Ithavoll was a colony of Marduk—it seems we can't afford colonies, any more—and it seceded from us. Ithavoll was then a planet like your Tanith seems to be. Today, it is a civilized world, and one of Marduk's best friends. You know, sometimes I think a few lights are coming on again, here and there in the Old Federation. If so, you Space Vikings are helping to light them."

"You mean the planets we use as bases, and the things we teach the locals?"

"That, too, of course. Civilization needs civilized technologies. But they have to be used for civilized ends. Do you know anything about a Space Viking raid on Aton, over a century ago?"

"Six ships from Haulteclere; four destroyed, the other two returned damaged and without booty."

The King of Marduk nodded.

"That raid saved civilization on Aton. There were four great nations; the two greatest were at the brink of war, and the others were waiting to pounce on the exhausted victor and then fight each other for the spoils. The Space Vikings forced them to unite. Out of that temporary alliance came the League for Common Defense, and from that the Planetary Republic. The Republic's a dictatorship, now, and just between Goodman Mikhyl and Goodman Lucas it's a nasty one and our Majesty's Government doesn't like it at all. It will be smashed sooner or later, but they'll never go back to divided sovereignty and nationalism again. The Space Vikings frightened them out of that when the dangers inherent in it couldn't. Maybe this man Dunnan will do the same for us on Marduk."

"You have troubles?"

"You've seen decivilized planets. How does it happen?"

"I know how it's happened on a good many, War. Destruction of cities and industries. Survivors among ruins, too busy keeping their own bodies alive to try to keep civilization alive. Then they lose all knowledge of how to be civilized."

"That's catastrophic decivilization. There is also decivilization by erosion, and while it's going on, nobody notices it. Everybody is proud of their civilization, their wealth and culture. But trade is falling off; fewer ships come in each year. So there is boastful talk about planetary self-sufficiency; who needs off-planet trade anyhow? Everybody seems to have money, but the government is always broke. Deficit spending—and always the vital social services for which the government has to spend money. The most vital one, of course, is buying votes to keep the government in power. And it gets harder for the government to get anything done."

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"The soldiers are sloppier at drill, and their uniforms and weapons aren't taken care of. The noncoms are insolent. And more and more parts of the city are dangerous at night, and then even in the daytime. And it's been years since a new building went up, and the old ones aren't being repaired any more."

Trask closed his eyes. Again, he could feel the mellow sun of Gram on his back, and hear the laughing voices on the lower terrace, and he was talking to Lothar Ffayle and Rovard Grauffis and Alex Gorram and Cousin Nikkolay and Otto Harkaman. He said:

"And finally, nobody bothers fixing anything up. And the power-reactors stop, and nobody seems to be able to get them started again. It hasn't quite gotten that far on the Sword-Worlds yet."

"It hasn't here, either. Yet." Goodman Mikhyl slipped away; King Mikhyl VIII looked across the low table at his guest. "Prince Trask, have you heard of a man named Zaspar Makann?"

"Occasionally. Nothing good about him."

"He is the most dangerous man on this planet," the King said. "And I can make nobody believe it. Not even my son."

XXI

Prince Bentrik's ten-year-old son, Count Steven of Ravary, wore the uniform of an ensign of the Royal Navy; he was accompanied by his tutor, an elderly Navy captain. They both stopped in the doorway of Trask's suite, and the boy saluted smartly.

"Permission to come aboard, sir?" he asked.

"Welcome aboard, count; captain. Belay the ceremony and find seats; you're just in time for second breakfast."

As they sat down, he aimed his ultraviolet light-pencil at a serving robot. Unlike Mardukan robots, which looked like surrealist conceptions of Pre-Atomic armored knights, it was a smooth ovoid floating a few inches from the floor on its own contragravity; as it approached, its top opened like a bursting beetle shell and hinged trays of food swung out. The boy looked at it in fascination.

"Is that a Sword-World robot, sir, or did you capture it somewhere?"

"It's one of our own." He was pardonably proud; it had been built on Tanith a year before. "Has an ultrasonic dishwasher underneath, and it does some cooking on top, at the back."

The elderly captain was, if anything, even more impressed than his young charge. He knew what went into it, and he had some conception of the society that would develop things like that.

"I take it you don't use many human servants, with robots like that," he said.

"Not many. We're all low-popu-

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lation planets, and nobody wants to be a servant."

"We have too many people on Marduk, and all of them want soft jobs as nobles' servants," the captain said. "Those that want any kind of jobs."

"You need all your people for fighting men, don't you?" the boy count asked.

"Well, we need a good many. The smallest of our ships will carry five hundred men; most of them around eight hundred."

The captain lifted an eyebrow. The complement of the *Victrix* had been three hundred, and she'd been a big ship. Then he nodded.

"Of course. Most of them are ground-fighters."

That started Count Steven off. Questions, about battles and raids and booty and the planets Trask had seen.

"I wish I were a Space Viking!"

"Well, you can't be, Count Ravary. You're an officer of the Royal Navy. You're supposed to fight Space Vikings."

"I won't fight you."

"You'd have to, if the King commanded," the old captain told him.

"No. Prince Trask is my friend. He saved my father's life."

"And I won't fight you, either, count. We'll make a lot of fireworks, and then we'll each go home and claim victory. How would that be?"

"I've heard of things like that," the captain said. "We had a war with Odin, seventy years ago, that was mostly that sort of battles."

"Besides, the King is Prince Trask's friend, too," the boy insisted. "Father and Mummy heard him say so, right on the Throne. Kings don't lie when they're on the Throne, do they?"

"Good Kings don't," Trask told him.

"Ours is a good King," the young Count of Ravary declared proudly. "I would do anything my King commanded. Except fight Prince Trask. My house owes Prince Trask a debt."

Trask nodded approvingly. "That's the way a Sword-World noble would talk, Count Steven," he said.

The Board of Inquiry, that afternoon, was more like a small and very sedate cocktail party. An Admiral Shefter, who seemed to be very high high-brass, presided while carefully avoiding the appearance of doing so. Alvyn Karffard and Vann Larch and Paytrik Morland were there from the *Nemesis*, and Bentrik and several of the officers from the *Victrix*, and there were a couple of Naval Intelligence officers, and somebody from Operational Planning, and from Ship Construction and Research & Development. They chatted pleasantly and in a deceptively random manner for a while. Then Shefter said:

"Well, there's no blame or censure of any sort for the way Commodore Prince Bentrik was sur-

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prised. That couldn't have been avoided, at the time." He looked at the Research & Development officer. "It shouldn't be allowed to happen many more times, though."

"Not many more, sir. I'd say it'll take my people a month, and then the time it'll take to get all the ships equipped as they come in."

Ship Construction didn't think that would take too long.

"We'll see to it that you get full information on the new submarine detection system, Prince Trask," the admiral said.

"You gentlemen understand you'll have to keep it under your helmets, though," one of the Intelligence men added. "If it got out that we were informing Space Vikings about our technical secrets. . . ." He felt the back of his neck in a way that made Trask suspect that beheadment was the customary form of execution on Marduk.

"We'll have to find out where the fellow has his base," Operational Planning said. "I take it, Prince Trask, that you're not going to assume that he was on his flagship when you blew it, and just put paid to him and forget him?"

"Oh, no. I'm assuming that he wasn't. I don't believe he and Ormm went anywhere on the same ship, after he came out here and established a base. I think one of them would stay home all the time."

"Well, we'll give you everything we have on them," Shefter promised. "Most of that is classified and you'll have to keep quiet about it, too. I just skimmed over the summary of what you gave us; I daresay we'll both get a lot of new information. Have you any idea at all where he might be based, Prince Trask?"

"Only that we think it's a non-Terra-type planet." He told them about Dunnan's heavy purchases of air-and-water recycling equipment and carniculture and hydroponic material. "That, of course, helps a great deal."

"Yes; there are only about five million planets in the former Federation space-volume that are inhabitable in artificial environment. Including a few completely covered by seas, where you could put in underwater dome cities if you had the time and material."

One of the Intelligence officers had been nursing a glass with a tiny remnant of cocktail in it. He downed it suddenly, filled the glass again, and glowered at it in silence for a while. Then he drank it briskly and refilled it.

"What I should like to know," he said, "is how this double obscenity of a Dunnan knew we'd have a ship on Audhumla just when we did," he said. "Your talking about underwater dome-cities reminded me of it. I don't think he just pulled that planet out of a hat and then went there prepared to sit on the bottom of the ocean for a year and a half waiting for some-

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thing to turn up. I think he knew the *Victrix* was coming to Audhumla, and just about when."

"I don't like that, commodore," Shefter said.

"You think I do, sir?" the Intelligence officer countered. "There it is, though. We all have to face it."

"We do," Shefter agreed. "Get on it, commodore, and I don't need to caution you to screen everybody you put onto it very carefully." He looked at his own glass; it had a bare thimbleful in the bottom. He replenished it slowly and carefully. "It's been a long time since the Navy's had anything like this to worry about." He turned to Trask. "I suppose I can get in touch with you at the Palace whenever I must?"

"Well, Prince Trask and I have been invited as house-guests at Prince Edvard's, I mean Baron Cragdale's, hunting lodge," Bentrik said. "We'll be going there directly from here."

"Ah." Admiral Shefter smiled slightly. Beside not having three horns and a spiked tail, this Space Viking was definitely *persona grata* with the Royal Family. "Well, we'll keep in contact, Prince Trask."

The hunting lodge where Crown Prince Edvard' was simple Baron Cragdale lay at the head of a sharply-sloping mountain valley down which a river tumbled. Mountains rose on either side in high scarps, some topped with perpetual snow, glaciers curling down from them. The lower ranges were forested, as was the valley between, and there was a red-mauve alpenglow on the great peak that rose from the head of the valley. For the first time in over a year, Elaine was with him, silently clinging to him to see the beauty of it through his eyes. He had thought that she had gone from him forever.

The hunting lodge itself was not quite what a Sword-Worlder would expect a hunting lodge to be. At first sight, from the air, it looked like a sundial, a slender tower rising like a gnomen above a circle of low buildings and formal gardens. The boat landed at the foot of it, and he and Prince and Princess Bentrik and the young Count of Ravary and his tutor descended. Immediately, they were beset by a flurry of servants; the second boat, with the Bentrik servants and their luggage was circling in to land. Elaine, he discovered, wasn't with him any more, and then he was separated from the Bentriks and was being floated up an inside shaft in a lifter-car. More servants installed him in his rooms, unpacked his cases, drew his bath and even tried to help him take it, and fussed over him while he dressed.

There were over a score for dinner. Bentrik had warned him that he'd find some odd types; maybe he meant that they wouldn't all be nobles. Among the commoners

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there were some professors, mostly social sciences, a labor leader, a couple of Representatives and a member of the Chamber of Delegates, and a couple of social workers, whatever that meant.

His own table companion was a Lady Valerie Alvarath. She was beautiful—black hair, and almost startlingly blue eyes, a combination unusual in the Sword-Worlds—and she was intelligent, or at least cleverly articulate. She was introduced as the lady-companion of the Crown Prince's daughter. When he asked where the daughter was, she laughed.

"She won't be helping entertain visiting Space Vikings for a long time, Prince Trask. She is precisely eight years old; I saw her getting ready for bed before I came down here. I'll look in on her after dinner."

Then the Crown Princess Melanie, on his other hand, asked him some question about Sword-World court etiquette. He stuck to generalities, and what he could remember from a presentation at the court of Excalibur during his student days. These people had a monarchy since before Gram had been colonized; he wasn't going to admit that Gram's had been established since he went off-planet. The table was small enough for everybody to hear what he was saying and to feed questions to him. It lasted all through the meal, and continued when they adjourned for coffee in the library.

"But what about your form of government, your social structure, that sort of thing?" somebody, impatient with the artificialities of the court, wanted to know.

"Well, we don't use the word government very much," he replied. "We talk a lot about authority and sovereignty, and I'm afraid we burn entirely too much powder over it, but government always seems to us like sovereignty interfering in matters that don't concern it. As long as sovereignty maintains a reasonable semblance of good public order and makes the more serious forms of crime fairly hazardous for the criminals, we're satisfied."

"But that's just negative. Doesn't the government do anything positive for the people?"

He tried to explain the Sword-World feudal system to them. It was hard, he found, to explain something you have taken for granted all your life to somebody who is quite unfamiliar with it.

"But the government—the sovereignty, since you don't like the other word—doesn't do anything for the people!" one of the professors objected. "It leaves all the social services to the whim of the individual lord or baron."

"And the people have no voice at all; why, that's tyranny," a professor Assemblyman added.

He tried to explain that the people had a very distinct and commanding voice, and that barons

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and lords who wanted to stay alive listened attentively to it. The Assemblyman changed his mind; that wasn't tyranny, it was anarchy. And the professor was still insistent about who performed the social services.

"If you mean schools and hospitals and keeping the city clean, the people do that for themselves. The government, if you want to think of it as that, just sees to it that nobody's shooting at them while they're doing it."

"That isn't what Professor Pullwell means, Lucas. He means old-age pensions," Prince Bentrik said. "Like this thing Zaspar Makann's whooping for."

He'd heard about that, on the voyage from Audhumla. Every person on Marduk would be retired on an adequate pension after thirty years regular employment or at the age of sixty. When he had wanted to know where the money would come from, he had been told that there would be a sales tax, and that the pensions must all be spent within thirty days, which would stimulate business, and the increased business would provide tax money to pay the pensions.

"We have a joke about three Gilgameshers space-wrecked on an uninhabited planet," he said. "Ten years later, when they were rescued, all three were immensely wealthy, from trading hats with each other. That's about the way this thing will work."

One of the lady social workers bristled; it wasn't right to make derogatory jokes about racial groups. One of the professors harrumphed; wasn't a parallel at all, the Self-Sustaining Rotary Pension Plan was perfectly feasible. With a shock, Trask recalled that he was a professor of economics.

Alvyn Karffard wouldn't need any twenty ships to loot Marduk. Just infiltrate it with about a hundred smart confidence men and inside a year they'd own everything on it.

That started them all off on Zaspar Makann, though. Some of them thought he had a few good ideas, but was damaging his own case by extremism. One of the wealthier nobles said that he was a reproach to the ruling class; it was their fault that people like Makann could gain a following. One old gentleman said that maybe the Gilgameshers were to blame, themselves, for some of the animosity toward them. He was immediately set upon by all the others and verbally torn to pieces on the spot."

Trask didn't feel it proper to quote Goodman Mikhyl to this crowd. He took the responsibility upon himself for saying:

"From what I've heard of him, I think he's the most serious threat to civilized society on Marduk."

They didn't call him crazy, after all he was a guest, but they didn't ask him what he meant, either. They merely told him that Makann was a crackpot with a contemptible following of half-wits, and just

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wait till the election and see what happened.

"I'm inclined to agree with Prince Trask," Bentrik said soberly. "And I'm afraid the election results will be a shock to us, not to Makann."

He hadn't talked that way on the ship. Maybe he'd been looking around and doing some thinking, since he got back. He might have been talking to Goodman Mikhyl, too. There was a screen in the room. He nodded toward it.

"He's speaking at a rally of the People's Welfare Party at Drepplin, now," he said. "May I put it on, to show you what I mean?"

When the Crown Prince assented, he snapped on the screen and twiddled at the selector.

A face looked out of it. The features weren't Andray Dunnan's—the mouth was wider, the cheekbones broader, the chin more rounded. But his eyes were Dunnan's, as Trask had seen them on the terrace of Karvall House. Mad eyes. His high-pitched voice screamed:

"Our beloved sovereign is a prisoner! He is surrounded by traitors! The Ministries are full of them! They are all traitors! The bloodthirsty reactionaries of the falsely so-called Crown Loyalist Party! The grasping conspiracy of the interstellar bankers! The dirty Gilgameshers! They are all leagued together in an unholy conspiracy! And now this Space Viking, this bloody-handed monster from the Sword-Worlds . . ."

"Shut the horrible man off," somebody was yelling, in competition with the hypnotic scream of the speaker.

The trouble was, they couldn't. They could turn off the screen, but Zaspar Makann would go on screaming, and millions all over the planet would still hear him. Bentrik twiddled the selector. The voice stuttered briefly, and then came echoing out of the speaker, but this time the pickup was somewhere several hundred feet above a great open park. It was densely packed with people, most of them wearing clothes a farm tramp on Gram wouldn't be found dead in, but here and there among them were blocks of men in what was almost but not quite military uniform, each with a short and thick swagger-stick with a knobbed head. Across the park, in the distance, the head and shoulders of Zaspar Makann loomed a hundred feet high in a huge screen. Whenever he stopped for breath, a shout would go up, beginning with the blocks of uniformed men:

"*Makann! Makann! Makann the Leader! Makann to Power!*"

"You even let him have a private army?" he asked the Crown Prince.

"Oh, those silly buffoons and their musical-comedy uniforms," the Crown Prince shrugged. "They aren't armed."

"Not visibly," he granted. "Not yet."

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"I don't know where they'd get arms."

"No, Your Highness," Prince Bentrik said. "Neither do I. That's what I'm worried about."

XXII

He succeeded, the next morning, in convincing everybody that he wanted to be alone for a while, and was sitting in a garden, watching the rainbows in the midst of a big waterfall across the valley. Elaine would have liked that, but she wasn't with him, now.

Then he realized that somebody was speaking to him, in a small, bashful voice. He turned, and saw a little girl in shorts and a sleeveless jacket, holding in her arms a long-haired blond puppy with big ears and appealing eyes.

"Hello, both of you," he said.

The puppy wriggled and tried to lick the girl's face.

"Don't, Mopsy. We want to talk to this gentleman," she said. "Are you really and truly the Space Viking?"

"Really and truly. And who are you two?"

"I'm Myrna. And this is Mopsy."

"Hello, Myrna. Hello, Mopsy."

Hearing his name, the puppy wriggled again and dropped from the child's arms; after a brief hesitation, he came over and jumped onto Trask's lap, licking his face. While he petted the dog, the girl came over and sat on the bench beside him.

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"Mopsy likes you," she said. After a moment, she added: "I like you, too."

"And I like you," he said. "Would you want to be my girl? You know, a Space Viking has to have a girl on every planet. How would you like to be my girl on Marduk?"

Myrna thought that over carefully. "I'd like to, but I couldn't. You see, I'm going to have to be Queen, some day."

"Oh?"

"Yes. Grandpa is King now, and when he's through being King, Pappa will have to be King, and then when he's through being King, I can't be King because I'm a girl, so I'll have to be Queen. And I can't be anybody's girl, because I'm going to have to marry somebody I don't know, for reasons of state." She thought some more, and lowered her voice. "I'll tell you a secret. I am a Queen now."

"Oh, you are?"

She nodded. "We are Queen, in our own right, of our Royal Bedroom, our Royal Playroom, and our Royal Bathroom. And Mopsy is our faithful subject."

"Is Your Majesty absolute ruler of these domains?"

"No," she said disgustedly. "We must at all times defer to our Royal Ministers, just like Grandpa has to. That means, I have to do just what they tell me to. That's Lady Valerie, and Margot, and Dame Eunice, and Sir Thomas. But Grandpa says they are good and wise ministers. Are you really a Prince? I didn't know Space Vikings were Princes."

"Well, my King says I am. And I am ruler of my planet, and I'll tell you a secret. I don't have to do what anybody tells me."

"Gee! Are you a tyrant? You're awfully big and strong. I'll bet you've slain just hundreds of cruel and wicked enemies."

"Thousands, Your Majesty."

He wished that weren't literally true; he didn't know how many of them had been little girls like Myrna and little dogs like Mopsy. He found that he was holding both of them tightly. The girl was saying: "But you feel bad about it." These children must be telepaths!

"A Space Viking who is also a Prince must do many things he doesn't want to do."

"I know. So does a Queen. I hope Grandpa and Pappa don't get through being King for just years and years." She looked over his shoulder. "Oh! And now I suppose I've got to do something else I don't want to. Lessons, I bet."

He followed her eyes. The girl who had been his dinner companion was approaching; she wore a wide sunshade hat, and a gown that trailed filmy gauze like sunset-colored mist. There was another woman, in the garb of an upper servant, with her.

"Lady Valerie and who else?" he whispered.

"Margot. She's my nurse. She's awful strict, but she's nice."

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"Prince Trask, has Her Highness been bothering you?" Lady Valerie asked.

"Oh, far from it." He rose, still holding the funny little dog. "But you should say, Her Majesty. She has informed me that she is sovereign of three princely domains. And of one dear loving subject." He gave the subject back to the sovereign.

"You should not have told Prince Trask that," Lady Valerie chided. "When Your Majesty is outside her domains, Your Majesty must remain incognito. Now, Your Majesty must go with the Minister of the Bedchamber; the Minister of Education awaits an audience."

"Arithmetic, I bet. Well, good-by, Prince Trask. I hope I can see you again. Say good-by, Mopsy."

She went away with her nurse, the little dog looking back over her shoulder.

"I came out to enjoy the gardens alone, he said, "and now I find I'd rather enjoy them in company. If your Ministerial duties do not forbid, could you be the company?"

"But gladly, Prince Trask. Her Majesty will be occupied with serious affairs of state. Square root. Have you seen the grottoes? They're down this way."

That afternoon, one of the gentlemen-attendants caught up with him; Baron Cragdale would be gratified if Prince Trask could find time to talk with him privately. Before they had talked more than a few minutes, however, Baron Cragdale abruptly became Crown Prince Edvard.

"Prince Trask, Admiral Shefter tells me that you and he are having informal discussions about co-operation against this mutual enemy of ours, Dunnan. This is fine; it has my approval, and the approval of Prince Vandarvant, the Prime Minister, and, I might add, that of Goodman Mikhyl. I think it ought to go further, though. A formal treaty between Tanish and Marduk would be greatly to the advantage of both."

"I'd be inclined to think so, Prince Edvard. But aren't you proposing marriage on rather short acquaintance? It's only been fifty hours since the *Nemesis* orbited in here."

"Well, we know a bit about you and your planet beforehand. There's a large Gilgamesher colony here. You have a few on Tanith, haven't you? Well, anything one Gilgamesher knows, they all find out, and ours are co-operative with Naval intelligence."

That would be why Andray Dunnan was having no dealings with Gilgameshers. It would also be what Zaspar Makann meant when he ranted about the Gilgamesh Interstellar Conspiracy.

"I can see where an arrangement like that would be mutually advantageous. I'd be quite in favor of it. Co-operation against Dunnan, of course, and reciprocal trade-rights on each other's trade planets,

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and direct trade between Marduk and Tanith. And Beowulf and Amaterasu would come into it, too. Does this also have the approval of the Prime Minister and the King?"

"Goodman Mikhyl's in favor of it; there's a distinction between him and the King, as you'll have noticed. The King can't be in favor of anything till the Assembly or the Chancellor express an opinion. Prince Vandarvant favors it personally; as Prime Minister, he is reserving his opinion. We'll have to get the support of the Crown Loyalist Party before he can take an equivocal position."

"Well, Baron Cragdale; speaking as Baron Trask of Traskon, suppose we just work out a rough outline of what this treaty ought to be, and then consult, unofficially, with a few people whom you can trust, and see what can be done about presenting it to the proper government officials . . ."

The Prime Minister came to Cragdale that evening, heavily incognito and accompanied by several leaders of the Crown Loyalist Party. In principle, they all favored a treaty with Tanith. Politically, they had doubts. Not before the election; too controversial a subject. "Controversial," it appeared, was the dirtiest dirty-name anything could be called on Marduk. It would alienate the labor vote; they'd think increased imports would threaten employment in Mardukan industries. Some of the interstellar trading companies would like a chance at the Tanith planets; others would resent Tanith ships being given access to theirs. And Zaspar Makann's party were already shrieking protests about the *Nemesis* being repaired by the Royal Navy.

And a couple of professors who inclined toward Makann had introduced a resolution calling for the courtmartial of Prince Bentrik and an investigation of the loyalty of Admiral Shefter. And somebody else, probably a stooge of Makann's, was claiming that Bentrik had sold the *Victrix* to the Space Vikings and that the films of the battle of Audhumla were fakes, photographed in miniature at the Navy Moon Base.

Admiral Shefter, when Trask flew in to see him the next day, was contemptuous about this test.

"Ignore the whole bloody thing; we get something like that before every general election. On this planet, you can always kick the Gilgameshers and the Armed Forces with impunity, neither have votes and neither can kick back. The whole thing'll be forgotten the day after the election. It always is."

"That's if Makann doesn't win the election," Trask qualified.

"That's no matter who wins the election. They can't any of them get along without the Navy, and they bloody well know it."

Trask wanted to know if Intelligence had been getting anything.

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"Not on how Dunnan found out the *Victrix* had been ordered to Audhumla, no;" Shefter said. "There wasn't any secrecy about it; at least a thousand people, from myself down to the shoeshine boys, could have known about it as soon as the order was taped.

"As for the list of ships you gave me, yes. One of them puts in to this planet regularly; she spaced out from here only yesterday morning. The *Honest Horris*."

"Well, great Satan, haven't you done anything?"

"I don't know if there's anything we can do. Oh, we're investigating, but . . . You see, this ship first showed up here four years ago, commanded by some kind of a Neobarb, not a Gilgamesher, named Horris Sasstroff. He claimed to be from Skathi; the locals there have a few ships, the Space Vikings had a base on Skathi about a hundred or so years ago. Naturally, the ship had no papers. Tramp trading among the Neobarbs, it might be years before you'd put in on a planet where they'd ever heard of ship's papers.

"The ship seems to have been in bad shape, probably abandoned on Skathi as junk a century ago and tinkered up by the locals. She was in here twice, according to the commercial shipping records, and the second time she was in too bad shape to be moved out, and Sasstroff couldn't pay to have her rebuilt, so she was libeled for spaceport charges and sold. Some one-lung trading company bought her and fixed her up a little; they went bankrupt in a year or so, and she was bought by another small company, Startraders, Ltd., and they've been using her on a milk-run to and from Gimli. They seem to be a legitimate outfit, but we're looking into them. We're looking for Sasstroff, too, but we haven't been able to find him."

"If you have a ship out Gimli way, you might find out if anybody there knows anything about her. You may discover that she hasn't been going there at all."

"We might, at that," Shefter agreed. "We'll just find out."

Everybody at Cragdale knew about the projected treaty with Tanith by the morning after Trask's first conversation with Prince Edvard on the subject. The Queen of the Royal Bedroom, the Royal Playroom and the Royal Bathroom was insisting that her domains should have a treaty with Tanith, too.

It was beginning to look to Trask as though that would be the only treaty he'd sign on Marduk, and he was having his doubts about that.

"Do you think it would be wise?" he asked Lady Valerie Alvarath. The Queen of three rooms and one four-footed subject had already decreed that Lady Valerie should be the Space Viking Prince's girl on the planet of Marduk.

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"If it got out, these People's Welfare lunatics would pick it up and twist it into evidence of some kind of a sinister plot."

"Oh, I believe Her Majesty could sign a treaty with Prince Trask," Her Majesty's Prime Minister decided. "But it would have to be kept very secret."

"Gee!" Myrna's eyes widened. "A real secret treaty; just like the wicked rulers of the old dictatorship!" She hugged her subject ecstatically. "I'll bet Grandpa doesn't even have any secret treaties!"

In a few days, everybody on Marduk knew that a treaty with Tanith was being discussed. If they didn't, it was no fault of Zaspar Makann's party, who seemed to command a disconcertingly large number of telecast stations, and who drenched the ether with horror stories of Space Viking atrocities and denunciations of carefully unnamed traitors surrounding the King and the Crown Prince who were about to betray Marduk to rapine and plunder. The leak evidently did not come from Cragdale, for it was generally believed that Trask was still at the Royal Palace in Malverton. At least, that was where the Makannists were demonstrating against him.

He watched such a demonstration by screen; the pickup was evidently on one of the landing stages of the palace, overlooking the wide parks surrounding it. They were packed almost solid with people, surging forward toward the thin cordon of police. The front of the mob looked like a checkerboard —a block in civilian dress, then a block in the curiously effeminate-looking uniforms of Zaspar Makann's People's Watchmen, then more in ordinary garb, and more People's Watchmen. Over the heads of the crowds, at intervals, floated small contragravity lifters on which were mounted the amplifiers that were bellowing:

"SPACE VI-KING—GO HOME! SPACE VI-KING—GO HOME!"

The police stood motionless, at parade rest; the mob surged closer. When they were fifty yards away, the blocks of People's Watchmen ran forward, then spread out until they formed a line six deep across the entire front; other blocks, from the rear, pushed the ordinary demonstrators aside and took their place. Hating them more every second, Trask grudged approval of a smart and disciplined maneuver. How long, he wondered, had they been drilling in that sort of tactics? Without stopping, they continued their advance on the police, who had now shifted their stance.

"SPACE VI-KING—GO HOME! SPACE VI-KING—GO HOME!"

"Fire!" he heard himself yelling. "Don't let them get any closer, fire now!"

They had nothing to fire with; they had only truncheons, no better weapons than the knobbed swagger-sticks of the People's Watch-

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men. They simply disappeared, after a brief flurry of blows, and the Makann storm-troopers continued their advance.

And that was that. The gates of the Palace were shut; the mob, behind a front of Makann People's Watchmen, surged up to them and stopped. The loud-speakers bellowed on, reiterating their four-word chant.

"Those police were murdered," he said. "They were murdered by the man who ordered them out there unarmed."

"That would be Count Naydnayr, the Minister of Security," somebody said.

"Then he's the one you want to hang for it."

"What else would you have done?" Crown Prince Edvard challenged.

"Put up about fifty combat cars. Drawn a deadline, and opened machine-gun fire as soon as the mob crossed it, and kept on firing till the survivors turned tail and ran. Then sent out more cars, and shot everybody wearing a People's Watchmen uniform, all over town. Inside forty-eight hours, there'd be no People's Welfare party, and no Zaspar Makann either."

The Crown Prince's face stiffened. "That may be the way you do things in the Sword-Worlds, Prince Trask. It's not the way we do things here on Marduk. Our government does not propose to be guilty of shedding the blood of its people."

He had it on the tip of his tongue to retort that if they didn't, the people would end by shedding theirs. Instead, he said softly:

"I'm sorry, Prince Edvard. You had a wonderful civilization here on Marduk. You could have made almost anything of it. But it's too late now. You've torn down the gates; the barbarians are in."

To be concluded

(Continued from page 110)

pot Hindu "astrologers," is still having its effect on the world and its weather.

Briefly, it works like this:

The "effects" of eclipses can culminate even a couple of years after the phenomenon. The celestial pattern created by an eclipse, especially one accompanied by many planets in conjunction, remains static until certain sensitive points are "triggered" by transits or configurations of major planets. We don't know how it works, except by observation and correlation. But we suspect some sort of electric or magnetic impulse—subtle but powerful.

This forecast is written in September. February's forecast, which will be written in October, will be accompanied by a check on October's weather. How accurate is astrology, when applied to weather forecasting? ■

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(*Continued from page 82*) Braun and Patricia, swung the gun to cover him exclusively. "I wouldn't," he said emptily.

Of a sudden, Ross' head jerked backward. His nose flattened, crushingly, and then spurted blood. He reeled back, his head flinging this way and that, bruises and cuts appeared magically.

Crowley's voice raged, "You asked for it, wise guy. How do you like these apples?"

The saturnine Larry chuckled sourly. "Hey, take it easy, chief. You'll kill the guy."

Ross had crumpled to the floor. There were still sounds of blows. Crowley raged, "You're lucky I'm not wearing shoes, I'd break every rib in your body!"

Patricia was staring in hopeless horror. She said sharply, "Don, remember you need Ross! You need all of us! Without all of us there can be no more serum."

The blows stopped.

"There will be no more serum anyway," Braun said shakily. The thin little man still stood before his chair having moved not at all since the action began.

Crowley's heavy breathing could be heard but he managed a snarl. "That's what you think, Doc."

Braun said, "By Caesar, I absolutely refuse to . . ."

Crowley interrupted ominously. "You know, Doc, that's where this particular common man has it all over you eggheads. You spend so much time reading, you don't take in the action shows on TV. Now what you're thinking is that even if we were going to twist your arm a little, you'd stick to your guns. But suppose, like, it was Pat we was working on, while you had to sit and watch."

The elderly man's brave front collapsed and his thin shoulders slumped.

Crowley barked a laugh.

Patricia by now, was bent over the unconscious Ross crying even as she tried to help him.

Crowley said to the silent, all but disinterested Larry, "Have these three put in separate rooms in that section they used for the violent wing when the place was a nuthouse. Have a good guard and see they don't talk back and forth."

"You're the boss," Larry said languidly.

Crowley was thorough. For that they had to give him credit. They were kept divided, each in a different room-cell and with at least two burly, efficient guards on constant watch. They were fed on army-type trays and their utensils checked carefully. There was no communication allowed — even with the guard.

The second day, Crowley took measures to see their disappearance raised no alarm at either their place of employment or at their residences. This raised few problems since all were single and all had

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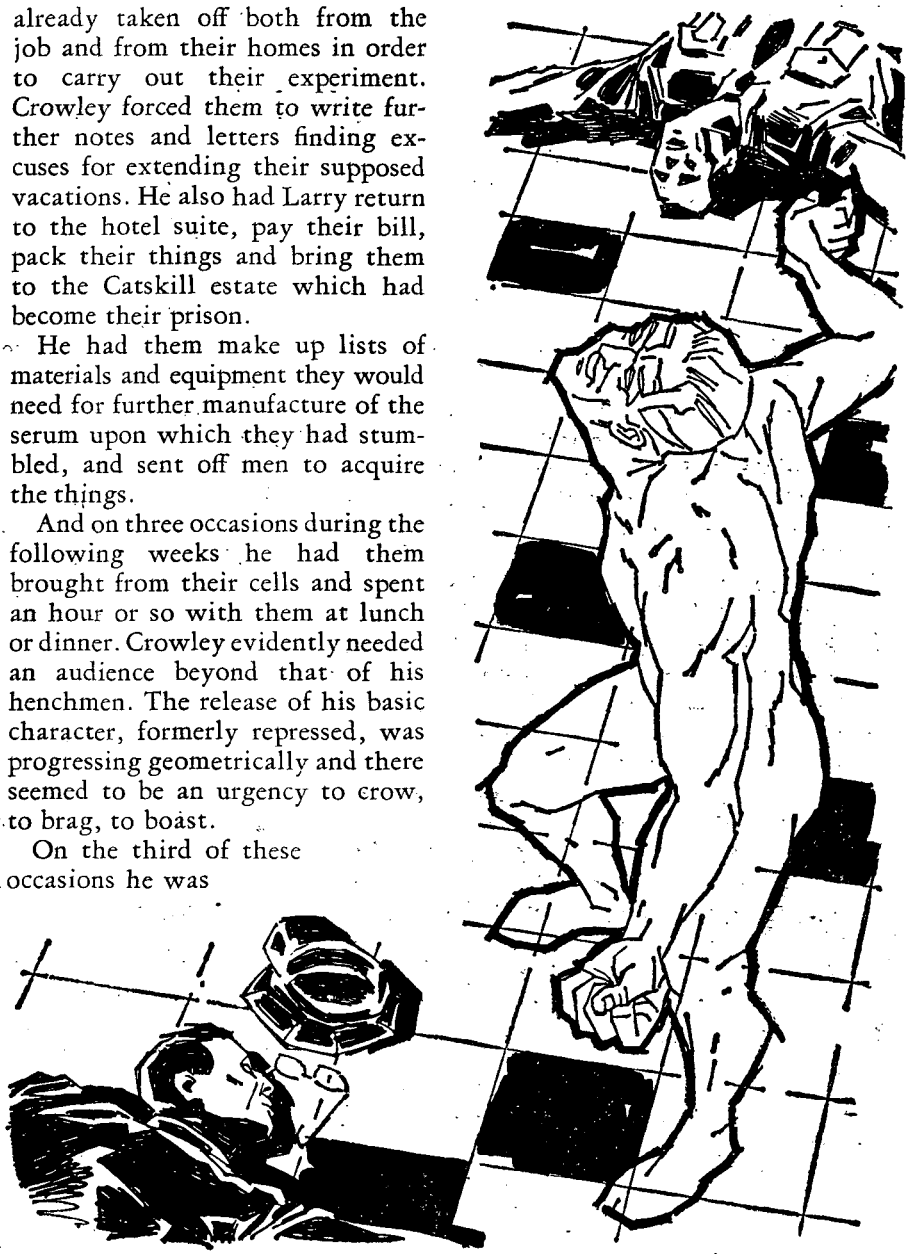
already taken off both from the job and from their homes in order to carry out their experiment. Crowley forced them to write further notes and letters finding excuses for extending their supposed vacations. He also had Larry return to the hotel suite, pay their bill, pack their things and bring them to the Catskill estate which had become their prison.

He had them make up lists of materials and equipment they would need for further manufacture of the serum upon which they had stumbled, and sent off men to acquire the things.

And on three occasions during the following weeks he had them brought from their cells and spent an hour or so with them at lunch or dinner. Crowley evidently needed an audience beyond that of his henchmen. The release of his basic character, formerly repressed, was progressing geometrically and there seemed to be an urgency to crow, to brag, to boast.

On the third of these occasions he was



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already seated at the table when they were ushered into the dining room. Crowley dismissed the guards with a wave of his hand as though theywere liveried servants.

All had eaten but there were liqueurs and coffee, cigars and cigarettes on the broad table.

Ross sank into a chair and growled, "Well, what hath the great man wrought by now?"

Crowley grinned at him, poured coffee and then a dallop of Napoleon brandy into it. He gestured with a hand. "Help yourselves, folks. How you feeling? You been getting all the books you wanted? You look kind of peaked, Pat."

"Miss O'Gara to you, you ape with delusions of grandeur," she snapped. "When are you going to let us out of those prison cells?"

Crowley wasn't provoked. The strong can afford to laugh at the malcontented weak. "That's one of the things you never know," he said easily. "You sure you want out? Something the Doc said the other day had a lotta fact in it. The fewer people know about this secret of mine, the better off I'll be and the better off I am, the better off the whole country is going to be and I gotta think about that. I got responsibilities."

"A combination of Engine Charley and Louis XIV, eh?" Ross muttered, running his beefy hand back over his crew cut. It was a relief to get out of his room and talk with the others, but he didn't want Crowley to see that.

"What's that?" the other was impatient of conversation that went above his head.

Dr. Braun explained gently. "One said, *I am the State*, and the other, *anything that's good for my corporation is good for the United States*—or something quite similar."

Crowley sipped at his coffee royal. "Well, anyway, Pat, the day you're ready to leave that cell, you'd better start worrying cause that'll mean I don't need you any more."

Ross growled, "You didn't answer my question. Robbed any banks lately, great man?"

The other eyed him coldly. "Take it easy, Buster. Maybe in the early stages of the Common Man Movement we hafta take some strong-arm measures, but that stage's about finished."

Patricia O'Gara was interested in spite of herself. She said. "You mean you already have all the money you need?"

He was expansive. Obviously there was nothing to lose with these three and he liked a sounding board. In spite of his alleged contempt for eggheads there was an element in Crowley which wished to impress them, to grant him equal status in their own estimations.

"There's a devil of a lot to know about big finance. You need a starter, but once you get it, the stuff just rolls in automatic." He grinned suddenly, almost boyishly. "Especially when you got a certain little advantage, like me."

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Braun said, interestedly, "How do you put your advantage to work?"

"Well, now, I gotta admit we aren't quite out of the woods. We need more capital to work with, but after tonight we'll have it. Remember that Brinks job up in New England a long time ago? Well, we got something lined up even bigger. I work with Larry and his boys to pull it. Then there's another thing cooking that Whitely's been keeping tabs on. It looks like IBM is going to split its stock, three for one. I gotta attend their next secret executive meeting and find out. If they do, we buy in just before, see? We buy on margin, buy options, all that sort of jazz. Whitely knows all about it. Then we got another big deal in Washington. Looks like the government might devaluate the dollar. Whitely explained it to me, kind of. Anyway, I got to sit in on a conference the President's gonna have. If they really decide to devalue, then Whitely and me, we go ahead and put every cent we got into Swiss gold. Then the day after devaluation, we switch it all back into dollars again. Double our money. Oh, we got all sorts of angles, Doc."

"By Caesar," Braun ejaculated. "You seem to have."

Patricia had poured herself some coffee and was sipping it, black, even as she stared at him. "But, Don, what do you need all this money for? You already have more than plenty. Why not call it all off. Get out from under."

Ross grunted, "Too late, Pat. Can't you see? He's got the power urge already."

Crowley ignored him and turned to her, pouring more coffee and cognac for himself. "I'm not running up all this dough just for me. You think you're the only one's got ideals, like? Let me tell you, I might just be a country boy but I got ambitions to put some things right in this world."

"Such as . . ." Patricia prodded, bitterness in her voice.

"Aw, we went through all that the other day. The thing is, now it's really under way. If you was seeing the newspapers these days, you'd know about the Common Man Party."

"Oh, oh," Ross muttered unhappily.

"It's just getting under way," Crowley said modestly, "but we're hiring two of the top Madison Avenue outfits to handle publicity and we're recruiting some of the best practical politicians in the field."

"Practical politicians!" Ross snorted. "Types like Huey Long, McCarthy, Pendergast, I suppose."

The other misunderstood him. "Yeah, and even better. We're going in big for TV time, full page ads in the newspapers and magazines. That sort of thing. The average man's getting tired of the same old talk from the Republicans and Democrats. Paul Teeter thinks we might

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have a chance in the next election, given enough dough to plow into it."

Ross leaned back disdainfully. "What a combination. Whitely, the broker who has been barred from activity on Wall Street; Teeter, the crooked politician, but with connections from top to bottom; and Larry, whatever his name is . . ."

"Morazzoni," Crowley supplied. "You know where I first ran into his name? In one of them true crime magazines. He's a big operator."

"I'll bet he is," the redhead growled. "Probably with good Mafia connections. I'm surprised you haven't attempted to take over that outfit."

Crowley laughed abruptly. "We're working on that, pal. Just take it easy and all these things will work their way out. But meanwhile I didn't bring you jokers here to make snide remarks. I got work for you. I'm fresh out of that serum and you three are going to brew me up another batch."

They looked at him, Dr. Braun, Ross Wooley, Patricia O'Gara, their faces registering stubbornness, revolt and dismay.

He shook his head. "Larry and some of his boys have experience. I gotta admit, I wouldn't even want to watch."

"I'm for standing firm," Braun said stiffly. "There are but three of us. The most they can do is kill us. But if this man's insanity is released on the world . . ."

Crowley was shaking his head in deprecation. "Like when you say the worst we can do is kill you. Man, haven't you heard about the Nazis and commies and all? You oughta read some of the men's adventure magazines. How do you think Joe Stalin got all them early Bolsheviks to confess? You think they weren't tough buzzards? Why make us go to all the trouble, when you'd just cave in eventually anyway? Save yourself the grief."

Patricia said impatiently, "He's right, I'm afraid. I would collapse rather quickly under physical coercion. You might last a bit longer, Ross possibly longer still. But in the end we would concede."

Crowley said, as though in amazement, "You know, eggheads aren't as stupid as some would reckon. O.K., folks, I got a laboratory all fixed up with your things. Let's go. Ah, Ross, old pal, I'm carrying heat, as Larry would say, so let's don't have any trouble, eh?"

He had been as good as his word in regards to the laboratory. It was obviously one of the rooms used by the staff when the place had been a sanitarium. Now, each of the three had all the equipment and supplies they required.

Crowley took a seat at the far end of the room, facing them. There had been a guard outside the door when they entered and a call would bring him in seconds. Even so, Crowley sat in such wise that his right hand was ready to plunge inside his coat to the gun that evi-

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dently was holstered there. He said, "O.K., folks, let's get about it."

It took them half an hour or so to sort out those materials each needed in his own contribution to the end product.

Their captor looked at his watch impatiently. "Let's get a move on, here. I thought this was going to take a few minutes."

Patricia said testily, "What's the hurry, Don?"

He grinned at her. "Tonight's the big night. This evening, just before closing, I walk into . . . Well, you don't have to know the name. Like I said, it'll make the Brinks job look like peanuts. They lock up the place and leave, see? O.K., about two o'clock in the morning, when the city's dead, Larry and the boys drive up into an alley, behind. I go around, one by one, and sock the four guards on the back of the head. Then I open up for Larry and they take their time and clear the place out. From then on, we got all the dough we need to start pyramiding it up on the Stock Exchange and like that."

Patricia had drawn on rubber gloves, pulled a lab apron around her. She began reaching for test tubes, measuring devices. She murmured softly, "What keeps you from telling yourself you're nothing but a crook, Don? When we first met you—it seems a terribly long time ago, back there in Far Cry—you didn't seem to be such a bad egg."

"We didn't know, then, he was a cracked egg," Ross muttered. He looked to where Crowley slouched, his eyes narrow as though considering his chances of rushing the other. Crowley grinned and shook his head. "Don't try it, Buster."

Crowley looked at Patricia. "You don't get it, sister. It's like somebody or other said. The ends, uh, justify the means. That means . . ."

"I know what it means," Patricia said impatiently.

Dr. Braun, who rather hopelessly was also beginning to work at the equipment their captor had provided, said reasonably, "Don, the greater number of the thinkers of the world have rejected that maxim. If you will, umah, analyze it, you will find that the end and the means are one."

"Yeah, yeah, a lot of complicated egghead gas. What I'm saying, Pat, is that what I'm eventually heading for is good for everybody. At least it's good for all real hundred per cent Americans. Everybody's going to go to college and guaranteed to come out with what you three got, a doctor's degree. Everybody's going to get a guaranteed annual wage, like, whether or not they can do any work. It's not a guy's fault if he gets sick or unemployed or something. Everybody . . ."

"Shades of all the social-reformers who ever lived," Ross muttered.

"By Caesar," Braun said in despair, "I have an idea you'll get

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the vote of every halfwit in the country."

Crowley came to his feet. "I don't like that kind of talk, Doc. Maybe I'm just a country boy, but I know what the common man wants and what I'm going to do is give it to him."

Patricia looked up from her work long enough to frown at him. "What special are you going to get out of this, Don?"

That took him back for a moment and he scowled at her.

"Come, come," she said. "You've already admitted to we three just what you think and are going to do. Now, how do you picture yourself, after all this has been accomplished?"

His face suddenly broke into its grin, a somewhat sly element in it now. "You know, when I get this all worked out, the folks are going to be pretty thankful."

"I'll bet," Ross muttered. He, too, was working at his element of compounding the serum.

"Yeah, they will, Buster," Crowley said truculently. "And they're going to want to show it. You ever seen one of those movies like 'Ben Hur' back in Roman days? Can you imagine everybody in the whole country thinking you were the best guy ever lived? You know, like an Emperor."

"Like Caligula," Dr. Braun said softly.

"I don't know any of their names, but they really had it made. Snap your fingers and there's a big banquet with the best floor show in the world. Snap your fingers and here comes the sexiest dames in Hollywood. Snap your fingers and some big entertainment like a chariot race, or something. Once I put this over, the Common Man Party, that's the way people are going to feel about me and want to treat me."

"And if they don't, you'll make them?" Ross said sarcastically.

"You're too smart for your own britches, egghead," Crowley snarled. He looked at his watch. "Let's get this rolling. I got to get on down to the city and start this caper going."

Ross handed a test tube to Dr. Braun and began stripping the gloves from his hands. "That's my contribution," he said.

Patricia had already delivered hers. Dr. Braun combined them, then heated the compound, adding a distillate of his own. He said, "When this cools . . ."

Crowley crossed the room to the door and said something to the guard there. He returned in a moment with an anthropoid ape in a cage. He sat it on the table and looked at them.

"O.K," he said to Braun, his voice dangerous. "Let's see you inject the monk with this new batch of serum."

Braun raised his eyebrows.

The other watched him narrowly, saying nothing further.

Dr. Braun shrugged, located a hypodermic needle and prepared it.

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In a matter of moments, the animal was injected.

Ross Wooley said sourly, "Don't you trust your fellow man, Don?"

"No, I don't, and stop calling me Don. It's Dan. Daniel Crowley."

The three of them looked at him in bewilderment.

The ape was beginning to shimmer as though he was being seen through a window wet with driving rain.

"Don's my goody-goody brother. Used to live in the same house with me, but ever since we were kids and I got picked up on a juvenile delinquent rap for swiping a car, he's been snotty. Anyway, now he's moved out to Frisco."

Patricia blurted, "But . . . but you let us believe you were Donald . . ."

He brushed it off with a flick of his hand. "You said you had some deal where I could make me some money. O.K., I was between jobs."

The ape was invisible now. Crowley peered in at him. "Seems to work, all right."

Dr. Braun sighed. "I am not a Borgia, Daniel Crowley."

"You're not a what?"

"Never mind. I wouldn't poison even you, if that is what you feared."

Daniel Crowley took up the new container of serum and put a lid on it. He said, "I got to get going. The guy out in front will get you back to your rooms. No tricks with him, Buster" — he was talking directly to Ross—"he's already beat a couple of homicide raps."

Back in their cell-rooms, they found that there was but one guard. Evidently, the all-out robbery attempt to be held this night involved practically all of Larry Morazzoni's forces. Beyond that, this guard did not seem particularly interested in keeping them from talking back and forth to each other through the peepholes that centered their doors.

After a couple of hours during which time they largely held silence, immersed in their own thoughts, Dr. Braun called out, "Patricia, Ross, I should tender my apologies. It was my less than brilliant idea to find the average man and use him as a guinea pig."

"No apology necessary," Patricia said impatiently. "We all went into it with open eyes."

"But you were correct, Pat," the doctor said unhappily. "Our common man turned out to be a Frankenstein monster."

Ross growled, "That's the trouble. It turned out he wasn't our common man but his brother, whose petty criminal record evidently goes back to juvenile days."

"Even that doesn't matter," Patricia said testily. "I've about come to the conclusion that it wouldn't have made any difference *who* we'd put in Don's . . . I mean Daniel Crowley's position. Man is too near the animal, as yet at least,

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to be trusted with such power. Any man."

"Why, Pat," Dr. Braun said doggedly, "I don't quite believe you correct. For instance, do you feel the same about me? Would I have reacted like our friend Dan?" He chuckled in deprecation.

"That's my point," she said. "I think you would . . . ultimately. Once again look at the Caesars, they held godlike power."

"You're thinking of such as Tiberius, Caligula, Nero, Commodus . . ."

"I'm also thinking of such as Claudius, the scholar who was practically forced to take the Imperial mantle. And Marcus Aurelius, the philosopher who although bound up in learning himself allowed his family free rein in their vices and finally turned the Empire over to his son Commodus, one of the most vicious men of all time. But take Caligula and Nero if you will. Both of them stepped into power comparatively clean and with the best of prospects. Well approved, well loved. What happened to them when given power without restraint?"

Ross grumbled, "I admit I missed the boat, but not for the reasons Pat presents. In a sane society, our serum would be a valuable contribution. But in a dog eat dog world, where it's each man for himself, then it becomes a criminal tool."

Patricia said sarcastically, "And can you point out a sane society?"

Ross grunted. "No," he said. After a moment he added, "You know, in a way Crowley was right. We three eggheads didn't do so well up against what he called his common sense. I tried to slug him, with negative results. Dr. Braun, you tried sweet reason on him. Forgive me if I laugh. Pat, you tried your womanly wiles, but he saw through that, too."

"The chickens have not all come home to roost," Patricia said mysteriously. "What time is it?", Ross told her.

She called to the guard, "See here, you."

"Shut up. You ain't supposed to be talking at all. Go to sleep."

"I want to speak to Mr. Morazzoni. It's very important and you are going to be dreadfully sorry if you don't bring him."

"Larry can't be bothered. He's getting ready to go on down to the city."

"I know what he's doing, but if he doesn't listen to me, he's going to be very unhappy and probably full of bullet holes."

The guard came over to her door and stared at her for a long moment. He checked the lock on her door and then those of Dr. Braun and Ross Wooley. "We'll see who's going to be sorry," he grunted. He turned and left.

When he returned it was with both Larry Morazzoni and Paul Teeter, Dan Crowley's political adviser. Morazzoni growled, "What

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goes on? You squares looking for trouble?"

Patricia said testily, "I suggest you let us out of here, Mr. Morazzoni. If you do, we pledge not to press kidnaping charges against you. I believe you are aware of the penalty in this State."

"You trying to be funny?"

"Definitely not, Mr. Morazzoni," Patricia said icily. "Daniel Crowley bragged to us of your plans for tonight."

The hoodlum muttered a contemptuous obscenity under his breath.

Paul Teeter, the heavy-set southerner said jovially, "But what has this to do with releasing you, Miss O'Gara? Admittedly Dan is a bit indiscreet but. . . ." He let the sentence fade away.

"Yes," Patricia said. "I realize that he is a nonprofessional in your ranks, and have little doubt that eventually you would have surmounted whatever precautions he has taken to keep you in underling positions. That's beside the point. The point is that by this time Daniel Crowley has, ah, infiltrated the institution you expected to burglarize tonight. He is inside, and you are still outside. There are four guards also inside, whom he is expected to eliminate before you can join him."

"He told you everything all right, the jerk," Larry said coldly, "But so what?"

"So Dan Crowley had us make up a new amount of serum tonight and tested it on a chimpanzee in the lab. If you'll go and check, you'll undoubtedly find the chimp is again visible."

The gunman looked at Paul Teeter blankly.

The other's reactions were quicker. "The serum lasts for twelve hours," Teeter barked.

"This batch lasts for three hours," Patricia said definitely. "Your friend Crowley is suddenly going to become visible right before the eyes of those four guards—and long before he had expected to eliminate them."

Teeter barked, "Larry, check that monkey."

Doc Braun spoke up for the first time since the appearance of the two. He said dryly, "You'll also notice that the animal is sound asleep. It seems that I added a slow-acting but rather potent sleeping compound to the serum."

The gunman started from the room in a rush.

Ross called after him, "If you'll look closely, you'll also note the chimp's skin has turned a brilliant red. There have been some basic changes in the pigment."

"Holy smokes," Paul Teeter protested, moping his face with a handkerchief. "Didn't he take any precautions against you people at all?"

Ross said, "He was too busy telling us how smart a country boy he happened to be."

Larry returned in moments, biting his lip in the first nervous

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manifestation any of them had ever seen in him. He took Teeter to one side.

Patricia called to them impatiently. "You have no time and no one to contact Crowley now. Don't be fools. Mend your bridges while you can. Let us out of here, and we'll prefer no charges."

Larry was a man of quick decisions. He snapped to the blank faced guard who had assimilated only a fraction of all this, "Go on back to the boys and tell them to start packing to get out of here. Tell them the fix has chilled. It's all off. I'll be there in a few minutes."

"O.K., chief." The other had the philosophical outlook of those who were meant to take orders and knew it. He left.

Larry and Teeter opened the cell doors.

Teeter said, "How do we know we can trust you?"

Ross looked at him.

Larry said, "It's a deal. Give us an hour to get out of here. Then use the phone if you want to call a taxi, or whatever. I ain't stupid, this thing was too complicated to begin with."

When Teeter and Morazzoni were gone, the three stood alone in the corridor, looking at each other.

The doctor pushed his glasses back onto his nose with a thumb and forefinger. "By Caesar," he said.

Ross ran a hefty paw back through his red crew cut and twisted his face into a mock grimace. "Well," he said, "I have to revise my former statement. I used brute strength against Crowley, the doctor used sweet reason, and Pat her womanly wiles. And all failed. But as biochemists, each working without the knowledge of the others, we used science—and it paid off. I suppose the thing to do now is buy three jet tickets for California."

Braun and Patricia looked at him blankly.

Ross explained. "Didn't you hear what Crowley said? His brother, Donald, has moved out to San Francisco. He's our real Common mon Man, we'll have to start the experiment all over again."

Dr. Braun snorted.

Patricia O'Gara, hands on hips, snapped, "Ross Wooley, our engagement is off!" ■

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P. Schuyler Miller

THE WINNERS

As old science-fiction hands know, a—and some would say the—highlight of the annual science-fiction conventions is the awarding of the several Annual Science-Fiction Achievement Awards. These were introduced in 1953 at the Philadelphia convention, but they did not become an institution until two years later, in Cleveland. Then the present rocketship award was designed by Cleveland fan Ben Jason, and essentially the present categories—novel, short fiction, professional magazine, illustrator, amateur publication—were established.

From 1955 until 1959—skipping the London convention in 1957, when awards were made only to magazines, and Los Angeles in 1958—there were separate awards for novelettes and short stories. LA had a short-story award only, and Pittsburgh, in 1960—mainly because only six award rockets were available—combined the two. What was a motion-picture award in 1958—none made in 1959 for lack of quality—is now a dramatic awards that covers movies, TV, radio and the stage. Various special awards have been and are made at the discretion of the various convention committees.

It has been argued in the past that no novel stood a chance of winning a "Hugo"—the awards are nicknamed for Hugo Gernsback, who belatedly got one of his own two years ago in Pittsburgh—unless it had been serialized or published as a paperback during the year for which the awards were made. The reason: most of the fans who nominate and vote on the awards simply do not read hard-bound books.

The balloting has borne out this contention, but now the jinx has been broken. Hugo winner for best novel of 1961 was Robert A. Heinlein's "Stranger in a Strange Land," whose paperback edition—Avon

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Book No. V-2056, 414 pages and 75 cents—was released in Chicago just in time for the convention. Runners-up were Daniel F. Galouye's "Dark Universe"—an original paperback and my own choice—two serials from this magazine, Harry Harrison's "Sense of Obligation" and Clifford D. Simak's "The Fisherman," and James White's "Second Ending" from *Fantastic*.

This is, in a sense, the exception that proves the rule. It seems pretty evident—and I am sure the author agrees—that "Stranger" won because of the storm of controversy which has been boiling over it among the fan-published magazines and to some extent among non-professional fans. Hardback or not, the book *was* read and its strong partisans probably felt bound to vote for it in defiance of the censors.

The Hugo for short fiction went—also for the first time—to a series rather than one story: Brian Aldiss' "Hothouse" stories about a fantastic future world in which mankind has shrunk to green midgets and vegetation has evolved to fill most ecological niches in a strange world. Aldiss got the "most promising new author" award in 1959, the last time it was made. Again, Analog had three candidates among the runners-up: Lloyd Biggle's "The Monument," Mack Reynolds' "Status Quo," and James H. Schmitz' "Lion Loose." Fritz Leiber was in the running with a fantasy, "Scylla's Daughter," from *Fantastic*.

John Campbell now has the fifth "Hugo" for his mantle—three from years in which Astounding was voted Best Magazine and two for Analog, plus a tie in 1953. Ed Emsh—who also tied back in 1953—took home his third "Hugo" as Best Illustrator, and Rod Serling's television series, "The Twilight Zone," also got its third award as Best Drama of the year. More voters *see* a TV series than ever go to films like "Village of the Damned" or "The Fabulous World of Jules Verne," which were never released in many communities. Best Amateur Publication award went to Richard Bergeron's *Warhoon*.

Just in time for the convention, Doubleday brought out a one-volume collection of the nine short stories and novelettes which have won Hugo's since 1955. In 1953 the first Achievement Award for fiction went to a novel, Alfred Bester's "Demolished Man"; and in the other years except 1958 and 1960 to date there were double awards. The collection has been edited by Isaac Asimov with a series of characteristic introductions that are just about worth the price of the book.

"The Hugo Winners"—318 pages and $4.50—should dispel the stories that the awards always go to the same kind of story. They have, very clearly, gone to science fiction over fantasy—and I think this represents readers' preference rather than any inferiority in the fantasies of these years, which by and large were of

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higher literary quality than the SF. Only one fantasy made it: Robert Bloch's "The Hell-Bound Train" in 1959.

Astounding/Analog has also had a pretty clear edge over the years. Eric Frank Russell's "Allamagoosa"—a short story about official red tape in the Space Navy—won in 1955. Murray Leinster's "Exploration Team"—still one of the best of the man/animal partnership stories—was Best Novelette in 1956. Clifford Simak's "The Big Front Yard" got the last award made to novelettes per se, in 1959, and Poul Anderson's "The Longest Voyage" won the short fiction Hugo in Seattle in 1961.

Let's look at 'em all, briefly. Most of these stories have been in anthologies and paperback collections, some over and over. They are good, and they are varied—as varied as we all know science fiction can be and should be and sometimes is.

In 1955 the novelette award went to Walter M. Miller's "The Darfsteller," a striking variation on the android-versus-human theme, in which a human actor—the kind of "darfsteller" who won't take direction—substitutes for a robot. The twists in the plot are twists in characterization and human relations, not a synthetic tangle, and the story is probably one of the three most memorable in the book. The short-story award in this year went to the already mentioned "Allamagoosa," a light entertainment made real by the writer's skill.

Leinster's "Exploration Team" in 1956 was another triumph of story-telling skill—not profound, not philosophically challenging, but a kind of entertainment that you don't forget. Its companion, on the other hand, is memorable for both theme and writing. It was Arthur C. Clarke's "The Star," which in only seven pages raises an unforgettable religious question. This will probably be the longest-remembered of any of the winners.

Avram Davidson's "Or All the Sea With Oysters" was the short-fiction winner in 1958, in Los Angeles. This one just about defies classification. The theme in fantasy—that a strange species, masquerading as paperclips, may mature into coat-hangers, then into bicycles—but the treatment is straight, utterly believable and convincing science fiction. This author has done better stories which won no awards; the time wasn't right.

In 1959 the novelette award went, as I've said, to Clifford D. Simak's "The Big Front Yard." This was one of that writer's quiet, solid, convincing presentations of the friendship of reasonable creatures whatever they may be. Bloch's "Hell-Bound Train" retold a folk-legend in modern terms and made it part of our own recent past.

Daniel Keyes' "Flowers for Algernon," winner in 1960 when the

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novelette and short-story awards were finally combined, is my third candidate for immortality. This is a pure *tour de force*, in which the development and collapse of intelligence in a human guinea pig is poignant and unforgettable.

Last year—1961—Poul Anderson's "The Longest Voyage" won the short-fiction Hugo. This, you'll recall, is another of that author's deceptive double-barreled offerings, a good story that turns out to have a hidden, serious point to make. It starts out as the seeming transfer of Columbus' first voyage to another planet, where at an equivalent stage in the development of a similar race the captain of a caravel discovers other inhabited lands—and a starship. Then Captain Orvik acts—shockingly—and the whole point of the story shifts and its significance deepens.

Now, in 1962, readers apparently have been unable to decide which of Brian Aldiss' wild, weird, showy distillations of strangeness is best, so they've voted for them all. Still no two alike; still no patterns discernible.

The award-winning novels in these years have been just as distinctive and just as unpredictable. For the record, since there is no room to comment on them all, they have been: Bester's "The Demolished Man" in 1953; "They'd Rather Be Right," by Mark Clifton and Frank Riley in 1955—the Astounding serial, not the book which came later; Heinlein's "Double Star" in 1956, and again for the serialization; Fritz Leiber's "The Big Time" in 1958; James Blish's "A Case of Conscience" in 1959—the paperback; Robert Heinlein's "Starship Trooper" in 1960—again a controversy-making story; and Walter M. Miller, Jr.'s "A Canticle for Leibowitz" in 1961. The Bester, Blish and Miller books stand out in this lot for their literary quality, but the two that have stirred up the most interest—though "Demolished Man" may top them at that—are Heinlein's last two winners: "Starship Trooper" and "Stranger in a Strange Land." And he has a new book coming, "Podkayne of Mars," that may be out by the time you see this . . .

. . . AND STILL CHAMPION

Every now and then, as someone is enthusiastically advancing the cause of one writer or another as *the* epitome of modern science fiction, along comes another book by Arthur C. Clarke. All bets are then off.

Are you an engineer who longs wistfully for the "hard" technical science fiction of a generation ago—the kind that nobody can write any more, unless it's Hal Clement? Well, the engineers I know turned handsprings last year over "A Fall of Moondust," by Arthur C. Clarke. Do you enjoy a story—the kind nobody but Robert A. Heinlein can write—in which every last detail of a future society is worked

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out so thoroughly that the setting is an essential part of the plot, yet never thrusts itself forward or becomes mere "scenery"? Ever read "The Deep Range"—by Clarke?

Well, then, what about those slight, bland, understated after-dinner stories that Lord Dunsany used to do so well in his "Jorkens" days, and nobody has equaled since? Nobody? Ever look into "Tales from the *White Hart*"? It's by Arthur Clarke.

Leaving out the American practitioners whose very volume of fiction tends to pull down their average stature—after all, the man who writes one terrific book can stay at the top if he never writes anything else—where will you find another book with the sweep of imagination that you find in Olaf Stapledon's "Last and First Men" or S. Fowler Wright's "The World Below"? Why, in Clarke's "The City and the Stars."

Nor does this planetary—in the sense of wandering—English scientist-fictionist-skin diver quit while he's ahead. Harcourt, Brace and World have published a new collection with fifteen of his stories, only one older than 1957 and two copyright in 1962. It is called "Tales of Ten Worlds;" it costs $3.95, and it is worth more.

Meanwhile Mr. Clarke has also been keeping his name fresh as a science writer. An international jury awarded him the 1962 Kalinga Prize for distinguished popularization of science. Its members were from Russia, Italy and India. Previous awards have gone to men like Louis de Broglie, Julian Huxley, George Gamow and Bertrand Russell.

The tales in this new collection, ranging in length from the seven-page "Dog Star" to the sixty-page "The Road to the Sea," also range across the full span of the author's varied talent. The book opens with his often-reprinted "I Remember Babylon" from *Playboy*, with its eminently practicable proposal for a plan by which Red China can capture the entire American television audience by beaming artistic pornography to home screens, well blended with propaganda. In the documentary vein, there's "Summer on Icarus"—here in Astounding in 1960 as "The Hottest Piece of Real Estate in the Solar System." This is one of those stories—Clarke's, naturally—that demolish my statement of some months back that science fiction never comes to grips with technology.

"Out of the Cradle, Endlessly Orbiting . . ." is a short, slight, pleasant, conversational item—again, only seven pages—about business-as-usual on the Moon. The last two lines make a telling point. "Who's There?"—only *six* pages, by golly!—is an even slighter, calmer after-dinner tale about a very odd occurrence in space. "Hate," which draws on the author's present diving activities for its convincingly authentic atmosphere, is the most melodrama-

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tic and artificial of the lot: a bitter Hungarian refugee discovers that there is a cosmonaut inside a lost Russian space capsule—and deliberately lets him die.

"Into the Comet," as well as being a lesson in astronomy in the best Gernsbackian vein—as was "Icarus"—is a puzzle story with a twist among twists: how to compute an orbit home when the computer won't work? "An Ape About the House" is a story about planned evolution that has produced "superchimps" as servants—but with a delightfully wry gimmick ending. "Saturn Rising" quietly teaches a neglected lesson: individuals die, institutions don't.

Harry Purvis, raconteur of the *White Hart*, tells a story about murder by death ray in "Let There Be Light"—and this is one of the very few cases where science has made a liar out of science fiction. The story opens with the ukase: "If you could see a ray, it couldn't hurt you"—but the lethally directed ray from a laser *is* colored.

"Death and the Senator" shows that characterization does play a part in science fiction; the story—here, in 1961—is trite and sentimental without the Senator's personality to give it meaning. "Trouble With Time" shows—in the lightest possible way—that there *is* still something new to be done with the gimmick on which Jules Verne hung "Around the World in Eighty Days," and a whopping practical problem in the way of colonizing Mars. "Before Eden" is more nearly conventional science fiction in its construction of a paradoxical Venus and its ironic ending, and "A Slight Case of Sunstroke" is gorgeous corn and "hard" science at the same time. "Dog Star," if you will, is fantasy—a myth of the men who go into space—and yet the author offers a perfectly plausible explanation in case you don't believe in ghosts.

Finally, there in "The Road to the Sea." This is the oldest of the lot, published in 1950 as "The Seeker of the Sphinx," and it is a romantically poetic vision of the far future, in the manner of "Childhood's End" and "The City and the Stars," though not their equal. This is a moribund Earth after the planet's vigor has been drained off into space, its great and glorious cities abandoned and Mankind reduced again to subsistence living. But in every society and every generation there will be the uneasy misfits, uncomfortable in the very comfort of conformity. Brant is one of these, and he finally goes in search of wonders in the forgotten city of Shastar, centuries old when Man at last found a new home among the stars, millennia older when Brant and his willful horse ambled down past the Golden Sphinx to the shores of what was once the Mediterranean.

The opening of the Twentieth Century was the era in which one man—an Englishman—established the basic themes, the moods, and

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the manners of modern science fiction. Conan Doyle wrote too little to claim a piece of the century, although he injected vigor and story-telling ability into the medium that Wells lacked, and created one of the very few memorable characters in science fiction in Professor Challenger. Now, at mid-century, another English writer seems to embody just about everything we seek and admire in the field. There have been greater solo performances than his, among writers of his own country and in the United States; but for a consistently high level of writing that ranges over the entire field, Arthur C. Clarke is the undefeated champion.

FACT AND FANCY, by Isaac Asimov. Doubleday & Co., Garden City, N.Y. 1962. 264 pp. $3.95

Here are seventeen of the Good Doctor's inimitable science columns from *Fantasy & Science Fiction.* If you read them regularly there, you may want to go over them again; anyway, there's one new one.

"The dullness of fact is the mother of fiction" are Dr. A's opening words. He then sets out to prove that fact need not be dull, but occasionally defeats himself because of a built-in fondness for figures . . . large figures, strange figures, significant figures and insignificant ones. There are moments that begin to sound like a Rabelaisian catalogue without the Rabelaisian impudence—then the Good Doctor tosses in a bit of information or point of view that gets you back on the track and zinging along.

Since I know less about the subject than about astronomy or physics, I find the biological and biochemical bits most rewarding. The opener, for example—"Life's Bottleneck"—on the way in which trace elements, mainly phosphorus, set a limit to the runaway expansion of life on Earth. However, the book is weighted the other way. The five chapters in the opening section—phosphorus, ice ages, the atmosphere, what Newton really did, the possibilities and impossibilities of putting a satellite into orbit around the Moon or another planet—are grouped as "The Earth—and Away." Next come four on the Solar System, opening with "Catskills in the Sky," a tourist-bureau view of the Sun and roaming on into chapters on the outskirts of the Solar System, comets, and the problems of living on a planet of a double sun like our old friend Alpha Centauri.

Next comes another five-chapter section on "The Universe," and finally my favorite part of the book; three chapters grouped as "The Human Mind": one on where "crazy ideas" come from, one on Dr. A's "built-in doubter," and one on the "Battle of the Eggheads" between the academic and scientific wings of the intellectual world.

I'd say this is an ideal book for planetariums *et al* to award as a prize in science fairs. A teacher just might read it and get as interested as the kids.

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(*Continued from page 5*) It was synthesized first by a Swiss pharmaceutical firm. Tests of the new compound were made on animals, and it was found that thalidomide had *no* effects—either positive or negative. It was an "inert ingredient" so far as the animals were concerned; the substance was abandoned in 1954.

Then the West German company, Chemie Grunenthal, started further investigations on it. Their careful tests also showed that it had no pharmacological effects on animals. The only reason they persisted was that thalidomide had now acquired a "crucial experiment" importance, practically. According to the best theoretical understandings, that particular type of molecular structure *should* have sedative effect—and if thalidomide did not have any effect, the theory needed some serious reworking.

So Grunenthal tried it on human patients—on epileptics as a possible anticonvulsant. It did not act as an anticonvulsant, but did act as an excellent sleep-inducer, in human beings. It gave restful, all-night sleep without after-effects, and was remarkably safe—so safe it could be sold without prescription. It was, literally, safer than aspirin; would-be suicides have succeeded by taking sufficiently massive quantities of aspirin—but would-be suicides who tried massive doses of thalidomide simply woke up after a somewhat prolonged sleep. It was far safer than the barbiturates; Marilyn Monroe's death by barbiturates would not have succeeded, had thalidomide replaced the barbiturates as tranquilizer-sedatives.

The "goofball" addiction would not be able to replace barbiturates with thalidomide; it doesn't act that way.

Thalidomide, as of 1960, had proven itself to be by far the safest, gentlest, most nearly fool-proof sedative pharmacology had yet discovered. Even by intent, a man couldn't hurt himself with the stuff!

The situation then was that a drug which could replace the very useful, but somewhat dangerous, barbiturates had become available—a drug so safe small children could use it—and so safe small children getting into the forbidden medical cabinet wouldn't kill themselves with it.

As of late 1960, then, Dr. Kelsey's whimsical, arbitrary, and unjustified action—or inaction—was keeping from the American public a drug which could replace a definitely dangerous, definitely toxic, and somewhat habit-forming drug, the barbiturates.

Thalidomide had been tested again and again by major ethical pharmaceutical houses, had been approved for nonprescription sale by government after government, and had been widely and safely used by many millions of people all through Europe.

Dr. Kelsey was, by nit-picking and dillydallying tactics, blocking

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the licensing of a safe, proven, and cheap replacement for a known-to-be-somewhat-toxic drug.

Logically, that position was totally unjustifiable.

It had all the earmarks of a petty Civil Servant tyrant, fussing endlessly, delighting over the power red-tape gave . . .

At this time—say January, 1961—there was no scientific reason to doubt that thalidomide was one hundred per cent safe, and a very successful drug.

In early 1961, some reports of a polyneuritis effect due to long-continued massive dosing with thalidomide began to appear. Its symptoms were a tingling "leg's gone to sleep" sort of feeling in hands and feet; discontinuation of the thalidomide dosing cleared up the cases usually, fairly promptly.

Be it remembered that the barbiturates, which thalidomide sought to replace, were favorite suicide pills, were habit forming, and had plenty of not-so-good possibilities latent in them. Of the two, thalidomide was far and away the safer . . . *on the basis of all available data.*

But that slight tendency to peripheral neuritis when overused for long periods was the only slightest indication that thalidomide had *any* untoward effects.

Dr. Kelsey promptly used that data as a basis for more, and more elaborate nit-picking and inaction. She demanded more reams of then-unobtainable data. Her position was, at that time, for the first time, faintly logical—slightly defensible on the basis of scientifically acceptable data. But it would still be rated as poor judgment and exaggerated caution. The American pharmaceutical company seeking to market thalidomide, naturally, was growing quite impatient with the unjustifiable and indefensible, and thoroughly illogical delaying tactics that were blocking them.

Neither "womanly intuition" nor "a strong hunch" has ever been held to constitute adequate grounds for governmental rulings, and precognition isn't considered to exist.

A German doctor was the first to suspect thalidomide of its actual disastrous characteristic—and it was November 15, 1961 that he first warned the Grunenthal company that he suspected their thalidomide preparation of being responsible for the "seal-baby" epidemic then appearing in Germany. At this time his data was still too scanty for him to make a definite statement. His first public discussion—"public" in the sense that it was made to an official medical group meeting in Germany—was on November 20, 1961—and then he was not in a position to state that thalidomide was responsible, but merely to say he strongly suspected a certain drug, which he did not name.

At this point in the development of the problem, data came in very rapidly; within a month thalidomide's danger was clearly recognized . . . and only then did Dr.

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Kelsey's inaction on the licensing application become absolutely defensible.

That the United States was saved from this disaster was not—repeat *not*—due to any scientific, logical, reasonable or even justifiable action. It was due to those totally indefensible and anathematized things, "a hunch" and/or "woman's intuition."

That Dr. Kelsey's hunch was one hundred per cent valid has nothing whatever to do with whether it was logical; for all I can know, she may have perfect and reliable trans-temporal clairvoyance, so that, in 1960, she was reading the medical reports published in late 1961, and basing her decisions very logically on that trans-temporal data.

The essential point is that *no possible logical method can prevent another thalidomide-like disaster.*

If the Federal Drug Administration can recruit a staff of expert crystal-ball gazers, tea-leaf readers and Tarot-card shufflers, it might be possible for the F.D.A. to rule correctly on all future drug licensing applications. Nothing short of genuine precognition can prevent such disasters completely.

Let's imagine the most completely and perfectly conservative, cautious, experimental program we can think of that will still allow some progress in medicine.

Suppose we require the following steps:

1. Careful and complete animal testing before any human testing is permitted.

2. A two-year test period on a very limited number of human beings so that, if there is some joker in the deck, it will afflict only a small number of people at worst.

3. A second two-year test on a larger number of patients—say about ten thousand people.

4. Released as a prescription medication only for another two-year period, so that close observation can be maintained.

Sounds reasonable and conservative? And yet there are a few known instances where a substance has a time-bomb effect so delayed that as much as *fifteen years* may elapse before the deadly effect appears. Beryllium dust poisoning is one example of a time-delay bomb. If you inhale BeO dust, it definitely won't hurt you a bit right away—and cases of a fifteen-year delay have been reported.

Inasmuch as we now have pretty good indication that genetic information is carried as a chemical code on protein molecules, it's conceivable that a substance might be discovered which affected only the genetic cells of unborn babies. That one would first begin to show its effects about eighteen years after it went into use. (Yes, some girls affected by the stuff would start having babies at thirteen or so . . . but not until a large number of affected individuals had babies would the statistical numbers be-

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come large enough for credibility and identification.)

So even a very, very cautious five-year system wouldn't catch all the time-bomb drugs.

And we *can't* run a fifty-year program like that! If someone finds a cancer cure today, will the world wait until our grandchildren demonstrate that it has no hidden menace, do you think?

And as to that cautious, two-year-plus-two-year program . . . thalidomide would have been licensed with flying colors!

Test 1 is the animal test. Thalidomide proved completely harmless—in fact completely ineffective!—to the usual laboratory animals. (Since the blowup, it's been found that enormous doses of thalidomide will not make a rabbit sleep . . . but will cause a pregnant rabbit to produce abnormal young. Equally massive doses of barbiturates don't do that; they kill the rabbit. It wouldn't have indicated anything to the investigators except that thalidomide was safer than barbiturates! And it has now been discovered that, for reasons so far known only to God, thalidomide *does* make horses sleep! But who uses horses as "convenient laboratory animals for testing new drugs"? And why should they; horses are herbivores, with a metabolism quite a long way from Man's. Monkeys are expensive—and they don't really match Man.)

Test 2—trying it on a small group of patients first.

Now the first slight indication that thalidomide could have some bad side-effects was that neuritis business. It results from prolonged overuse of the drug.

The doctors administering the first test-use of the new drug would, of course, regulate it carefully. There would be no long-continued overuse under their administration—and therefore thalidomide wouldn't have produced any neuritis.

On that first, limited-sample test, there would be an inevitable, human tendency to avoid pregnant young women as test subjects for so experimental a drug.

Result: thalidomide would have checked in as one hundred per cent safe and effective.

The final two-year test with several thousand people. On th s one we don't have to guess; we've got the statistics.

During the time thalidomide was being considered by the Federal Drug Administration for licensing in this country, selected physicians in the United States were sent supplies of the drug for experimental use.

Under this program, 15,904 people are known to have taken the pills. Certainly that's a good-sized second-level testing group for our proposed hyper-cautious test system.

Of those nearly 16,000 people, about 1 in 5—3,272—were women of child-bearing age, and 207 of

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them were pregnant at the time.

There were no abnormal babies born, and no cases of polyneuritis reported.

Thalidomide passed the cautious tests with flying colors.

Now the abnormalities that thalidomide does cause are some kind of misdirection of the normal growth-forces of the foetus. The abnormalities are of a type that was well known to medicine long before thalidomide came along—abnormal babies have been produced for all the years the human race has existed, remember.

Suppose that in our test, some women did bear abnormal babies. Say three of them were abnormal, and lived. (A goodly number of the thalidomide-distorted babies died within hours. It doesn't *only* affect arms and legs; thalidomide can mix up the internal organs as though they had been stirred with a spoon.)

So . . .? So what? Aren't a certain number of abnormal babies appearing all the time anyway? And with all this atomic-bomb testing going on . . . and this woman was examined repeatedly by X ray during pregnancy . . . and remember that in the normal course of nine months of living, she will have taken dozens of other drugs, been exposed to uncountable other environmental influences, perhaps been in a minor automobile accident . . .

Not until the drug is "tested" on literally millions of human beings will it be possible to get sufficiently numerous statistical samplings to be able to get significant results. Toss a coin three times, and it may come heads every time. This proves coins fall heads-up when tossed?

Another drug was introduced for experimental testing some years ago. The physicians who got it were told to check their experimental patients carefully for possibilities of damage to liver, stomach and/or kidneys, the expected possible undesirable side-effects of the drug. Practically no such damage was found—the drug was effective, and only in the very exceptional patient caused sufficient liver, stomach or kidney reaction to indicate it should be discontinued.

Only it caused blindness.

The reaction was frequent and severe enough to make the drug absolutely impossible as a medicament—and was totally unexpected. It had not caused any such reaction in any of the experimental animals.

No—the lesson of thalidomide is quite simple.

So long as human beings hope to make progress in control of disease and misery, some people will be lost in the exploration of the unknown.

There is no way to prevent that. There is no possible system of tests that can avoid it—only minimize the risk.

We could, of course, simply stop trying new drugs at all.

The animals never did try the pain and the risk of fire.

They're still animals, too.

The Editor

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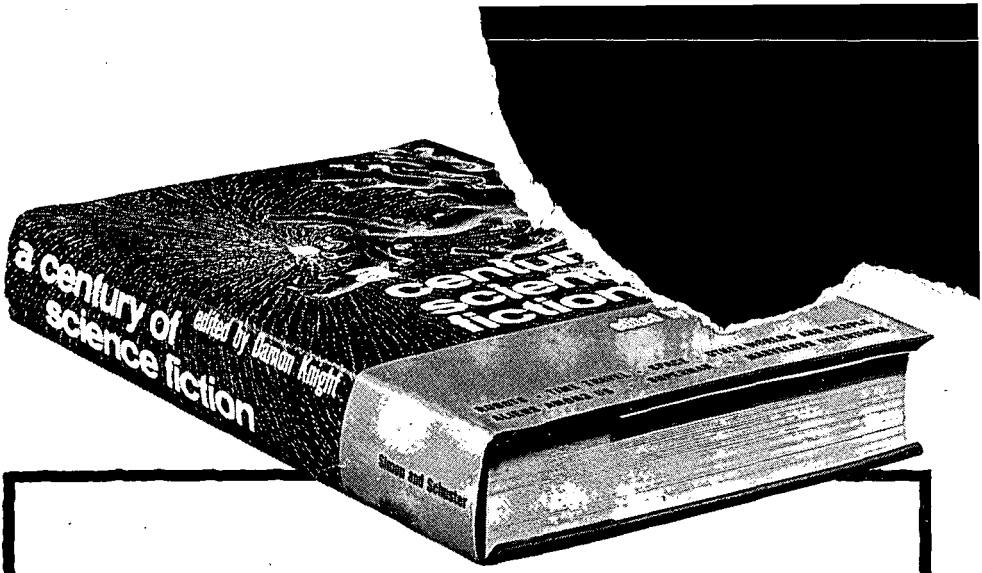

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